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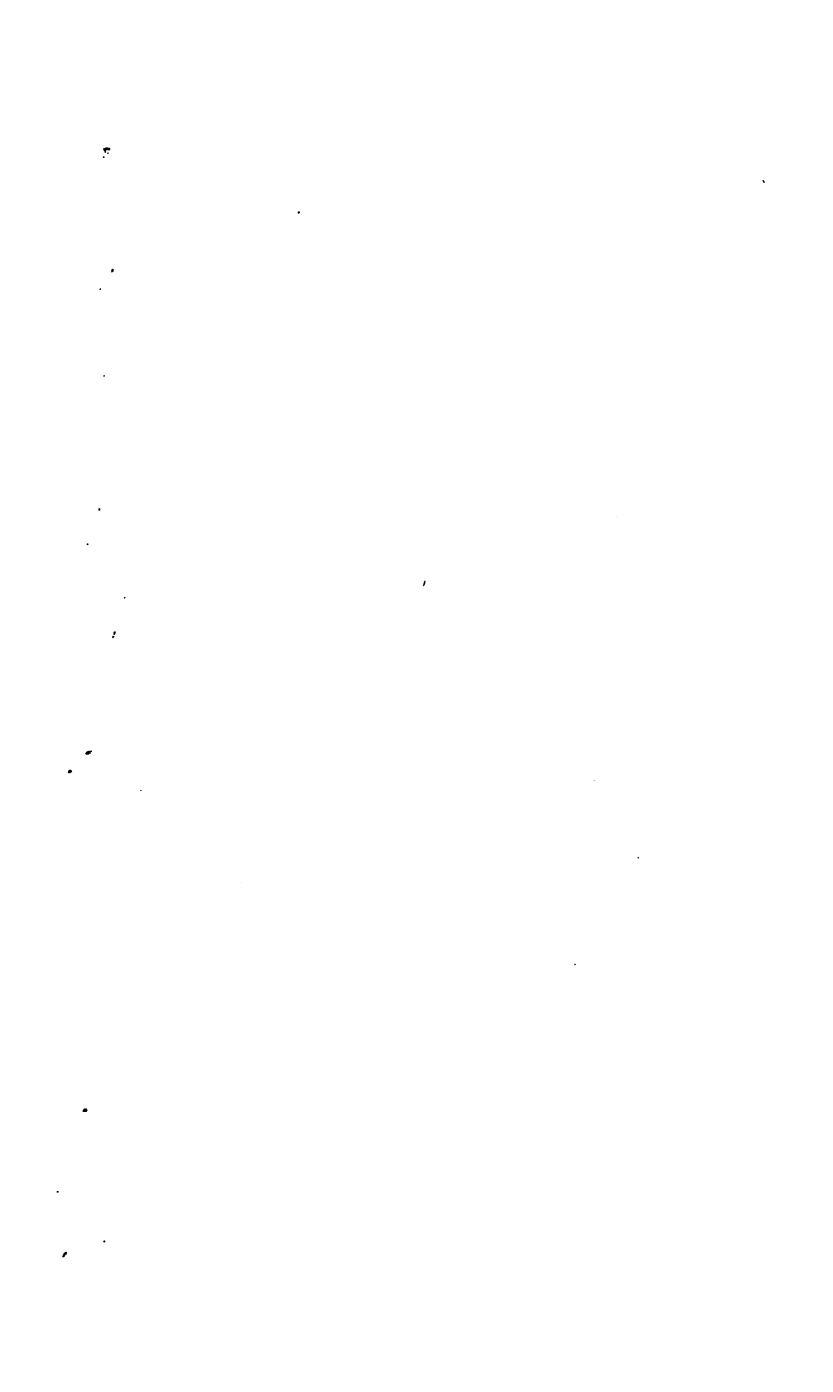
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DITCHING AND DRAINING  
TABLES.







# DITCHING AND DRAINING:

A MANUAL OF

## T A B L E S

FOR COMPUTING WORK DONE.

SHOWING

LENGTH OF DRAINS IN ANY PIECE OF LAND FROM 1 POLE TO 100 ACRES,

NUMBER OF PIPES OR TILES REQUIRED;

CUBIC OR SOLID CONTENTS OF DIGGING IN DITCHES AND DRAINS;

WITH OTHER USEFUL TABLES.



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## PREFACE.

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THIS little Work, extracted from the *Agriculturist's Calculator*, will, it is hoped, prove useful to persons engaged in the conducting of Ditching and Draining operations, whether as Employers of Labour on their own estates or farms or as Professional Contractors. The Tables have been prepared with the utmost care, and every effort made to insure their correctness, and render them suitable for the purposes which they are intended to serve. Explanatory remarks are also prefixed to each set of Tables, to facilitate their consultation and their application to actual practice. It is believed that, by the aid of this Manual, much valuable time may be saved, and mistakes, occasioned by the working out of intricate calculations, altogether avoided.





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# TABLE I.

SHOWING THE LENGTH OF DRAINS IN AN IMPERIAL ACRE, AT DISTANCES FROM 9 TO 63 FEET APART, IN YARDS, IN STATUTE RODS OF  $5\frac{1}{2}$  YARDS, AND IN ROODS OF 6 YARDS: ALSO THE NUMBER OF DRAINING TILES OR PIPES THAT ARE REQUIRED TO LAY THE DRAINS, AT LENGTHS OF 12, 13, 14, 15, 16, AND 18 INCHES.

THE first column on the left hand contains the distances or widths between the drains; the second contains the length of drains per acre, in yards; the third the number of rods per acre; the fourth the number of roods per acre; and the fifth to the tenth columns contain the number of tiles of each length, required for an acre, at the opposite widths in the left-hand column.

In the Table, fractions less than  $\frac{1}{2}$  of a foot are omitted in the second column, and when less than  $\frac{1}{2}$  of a yard, in the third and fourth.

DRAINS in some parts of the country are measured by the rood of 36 yards in length, and in other parts by the chain of 66 feet; but statute rods of  $5\frac{1}{2}$  yards, and roods of 6 yards in length, being most generally used, the Table is calculated at these lengths. The rood of 36 yards is equal to 6 rods of this Table, and the chain of 66 feet is equal to  $3\frac{1}{2}$  rods.

IT will be observed that the length of the drains, and the number of tiles required per acre, is in proportion to the width between the drains; therefore if a width twice that of any in the Table is wanted, you have only to divide the numbers in the columns opposite that width by 2, the quotients will give the length of drains and number of tiles required.

TO find the expense of draining per acre, multiply the number of yards, rods, or roods, opposite the proposed width between the drains in the Table, by the estimated cost per yard, rod, or rood, as the case may be.

**EXAMPLE I.** It is proposed to drain a field, placing the drains 30 feet apart, required the length of drains per Imperial acre in yards and roods, and the number of tiles 14 inches in length that will be needed per acre.

Look in the left-hand column of the Table for 30 feet, the width, opposite which stands  $48\frac{1}{2}$  yards, or 80 rods; 4 yards, the length of the drains, and under length 14 inches stands 1245, the number of tiles required to lay the same.

**EXAMPLE II.** In draining a field at a width of 80 feet, how many yards, and how many rods of drains are there per Imperial acre, and what number of tiles 15 inches in length will be required per acre?

As the Table does not extend to 80 feet, divide the numbers opposite 40 feet by 2, which gives  $18\frac{1}{2}$  yards, or 33 rods of drains, and 436 tiles 15 inches in length per Imperial acre.

**EXAMPLE III.** Required the expense of draining per acre, at a width be-

8 TABLE I.—LENGTH OF DRAINS AND TILES REQUIRED PER ACRE.

tween the drains of 33 feet, the estimated cost being 8½d. per rood of 6 yards.

In the Table opposite 33 feet, the width, stands 73 rods 2 yards, which at 6½d. per rood, is £2, 11s. 1½d., the expense per acre.

COST OF DRAINING PER ACRE.

The following estimates of the cost of drains is taken from Morton's *Cyclopaedia of Agriculture*, and may be useful to those who are not in possession of that work. The cost of cutting, laying, and filling in pipe drains of from 3 feet, to 3 feet 6 inches in depth, the greater depths being in clay or gravel, and the lesser depths in hard indurated soils requiring picking, was 5½d. to 6½d. per rod of 5½ yards, or about 1d. per yard.

Taking the price of tiles at 12s. per 1000, the cost of draining per rod, in soils somewhat difficult to excavate, exclusive of carriage of pipes or tiles, for 3½ feet drains, will be about 7½d.

The third column of the following Table shows the cost per acre, according to the different distances between the drains, exclusive of carriage, and of the slight additional expense of the larger pipes required for the mains.

Where the drains are not so deep as 3½ feet, or where, from the ease with which the cutting can be effected, or from other causes, the cost of workmanship does not exceed 4d. per rod, the cost of the drains, omitting fractions, will be as stated in the fourth column of the Table.

Stone drains 3 feet 6 inches in depth, and 5 inches wide in the bottom, in indurated stony clay, is estimated to cost 1s. per rod, for quarrying whinstone, and breaking it to pass through a 3-inch ring; filling stones into carts, and carriage; emptying the stones into drains with the drain-screen, to the depth of 14 inches, and returning the earth into the drains with the spade. The cost per acre is shown in the 5th column of the Table.

Intervals between the drains in ft.	Rods per acre.	Cost per acre of 3½ feet drains.	Cost per acre, reckoning work- manship at 4d. per rod.	Cost per acre of 3½ feet stone drains.
		£ s. d.	£ s. d.	£ s. d.
15	176	5 15 6	4 13 6	8 10 0
18	146½	4 16 3	3 18 10	7 6 8
21	125½	4 2 6	3 6 10½	6 5 8
24	110	3 12 2½	2 18 5	5 10 0
27	97½	3 4 1½	2 12 0	4 17 9
30	88	2 17 0	2 6 9	4 8 0
33	80	2 12 6	2 2 6	4 0 0
36	73½	2 8 1½	1 19 1½	3 13 4
39	67½	2 4 4½	1 16 0	3 7 8
42	62½	2 1 3	1 13 6	3 2 10

Drains of broken stones are thus found to be fully 30 per cent. more costly than those of pipe tiles, when cut to the same depths, in the same kind of soil.

TABLE I.—LENGTH OF DRAINS AND TILES REQUIRED PER ACRE. 9

Width between the drains in ft.	Length of drains per acre in yds.	Length of drains per acre in sta- tute rods of $5\frac{1}{2}$ yards.		Length of drains per acre in rods of 6 yards.	NUMBER OF TILES PER ACRE.					
		Rods.	Yds.		Length 12 in.	Length 15 in.	Length 18 in.	Length 21 in.	Length 24 in.	Length 27 in.
9	1613 1	293	1 $\frac{1}{2}$	268 5 $\frac{1}{2}$	4840	4468	4149	3872	3630	3227
10	1462 0	264 0		242 0	4356	4021	3734	3485	3267	2904
11	1320 0	240 0		220 0	3960	3656	3395	3168	2970	2640
12	1210 0	220 0		201 4	3630	3351	3112	2904	2723	2420
13	1117 2 $\frac{1}{2}$	203 0 $\frac{1}{2}$		186 1	3351	3094	2873	2681	2514	2234
14	1037 1	183 3 $\frac{1}{2}$		172 5	3112	2873	2667	2490	2334	2075
15	968 0	176 0		161 2	2904	2681	2490	2324	2178	1936
16	907 1 $\frac{1}{2}$	165 0		151 1 $\frac{1}{2}$	2723	2514	2334	2178	2042	1815
17	854 0 $\frac{1}{2}$	155 1 $\frac{1}{2}$		142 2	2563	2366	2197	2050	1922	1709
18	806 2	146 3 $\frac{1}{2}$		134 2 $\frac{1}{2}$	2420	2234	2075	1936	1815	1614
19	764 0 $\frac{1}{2}$	138 5 $\frac{1}{2}$		127 2 $\frac{1}{2}$	2293	2117	1966	1835	1720	1529
20	726 0	132 0		121 0	2178	2011	1867	1743	1634	1452
21	691 1 $\frac{1}{2}$	125 4		115 1 $\frac{1}{2}$	2075	1915	1778	1650	1556	1383
22	660 0	120 0		110 0 $\frac{1}{2}$	1980	1828	1698	1584	1485	1320
23	631 1	114 4 $\frac{1}{2}$		105 1 $\frac{1}{2}$	1894	1749	1624	1516	1421	1263
24	605 0	110 0		100 5	1815	1676	1556	1452	1362	1210
25	580 2 $\frac{1}{2}$	105 3 $\frac{1}{2}$		96 5	1743	1609	1494	1394	1307	1162
26	558 1 $\frac{1}{2}$	101 3		93 0 $\frac{1}{2}$	1676	1547	1437	1341	1257	1117
27	537 2 $\frac{1}{2}$	97 4 $\frac{1}{2}$		89 3 $\frac{1}{2}$	1614	1490	1383	1291	1210	1076
28	518 1 $\frac{1}{2}$	94 1 $\frac{1}{2}$		86 2 $\frac{1}{2}$	1556	1437	1334	1245	1167	1038
29	500 2	91 0 $\frac{1}{2}$		83 2 $\frac{1}{2}$	1503	1387	1288	1202	1127	1002
30	481 0	88 0		80 4	1452	1341	1245	1162	1089	968
31	468 1	85 0 $\frac{1}{2}$		78 0 $\frac{1}{2}$	1406	1298	1205	1125	1054	937
32	453 2 $\frac{1}{2}$	82 2 $\frac{1}{2}$		75 3 $\frac{1}{2}$	1362	1257	1167	1089	1021	908
33	440 0	80 0		73 2	1320	1219	1132	1056	990	880
34	427 0	77 3 $\frac{1}{2}$		71 1	1282	1183	1099	1025	961	855
35	414 2 $\frac{1}{2}$	75 2 $\frac{1}{2}$		69 1	1245	1149	1067	996	934	830
36	403 1	73 1 $\frac{1}{2}$		67 1 $\frac{1}{2}$	1210	1117	1035	968	908	807
37	392 1 $\frac{1}{2}$	71 2		65 2 $\frac{1}{2}$	1178	1087	1010	942	883	785
38	382 0 $\frac{1}{2}$	69 2 $\frac{1}{2}$		63 4	1147	1059	983	918	860	765
39	372 1	67 3 $\frac{1}{2}$		62 0 $\frac{1}{2}$	1117	1032	958	894	838	745
40	363 0	66 0		60 3	1089	1006	934	872	817	726
41	354 0 $\frac{1}{2}$	64 2 $\frac{1}{2}$		59 0	1063	981	911	850	797	709
42	345 2	62 4 $\frac{1}{2}$		57 3 $\frac{1}{2}$	1038	958	889	830	778	693
43	337 2	61 2 $\frac{1}{2}$		56 1 $\frac{1}{2}$	1014	936	869	811	760	676
44	330 0	60 0		55 0	990	914	849	793	743	660
45	322 2	58 3 $\frac{1}{2}$		53 4 $\frac{1}{2}$	968	894	830	775	726	646
46	315 2	57 2 $\frac{1}{2}$		52 3 $\frac{1}{2}$	947	875	812	758	711	632
47	308 2 $\frac{1}{2}$	56 1		51 3	927	857	795	742	696	618
48	302 1 $\frac{1}{2}$	55 0		50 2 $\frac{1}{2}$	908	838	778	727	681	605
49	296 1	53 4 $\frac{1}{2}$		49 2 $\frac{1}{2}$	889	821	762	712	667	593
50	290 1	52 4 $\frac{1}{2}$		48 2 $\frac{1}{2}$	872	805	747	697	654	581
51	284 2	51 4 $\frac{1}{2}$		47 2 $\frac{1}{2}$	855	789	733	684	641	570
52	279 2 $\frac{1}{2}$	50 4 $\frac{1}{2}$		46 3 $\frac{1}{2}$	838	774	719	671	629	559
53	273 2 $\frac{1}{2}$	49 4 $\frac{1}{2}$		45 4	822	759	705	658	617	548
54	268 2 $\frac{1}{2}$	48 5		44 4 $\frac{1}{2}$	807	745	692	646	605	538
55	264 0	48 0		44 0	792	732	679	634	594	528
56	259 0 $\frac{1}{2}$	47 0 $\frac{1}{2}$		43 1 $\frac{1}{2}$	778	719	667	623	584	519
57	254 2 $\frac{1}{2}$	46 1 $\frac{1}{2}$		42 2 $\frac{1}{2}$	765	706	656	612	574	509
58	250 1	45 2 $\frac{1}{2}$		41 4 $\frac{1}{2}$	752	694	644	601	564	501
59	246 0 $\frac{1}{2}$	44 4		41 0	739	682	633	591	554	493
60	242 0	44 0		40 2	726	671	623	581	545	484
61	238 0	43 1 $\frac{1}{2}$		39 4	715	660	613	572	536	477
62	234 0 $\frac{1}{2}$	42 3 $\frac{1}{2}$		39 0 $\frac{1}{2}$	703	649	603	563	527	469
63	230 1 $\frac{1}{2}$	41 5		38 2 $\frac{1}{2}$	692	639	593	554	519	461

# TABLE II.

SHOWING THE LENGTH OF DRAINS IN ANY FIELD, OR QUANTITY OF LAND, FROM 1 POLE TO 100 ACRES, IN STATUTE RODS OF  $5\frac{1}{2}$  YARDS, AND IN ROODS OF 6 YARDS IN LENGTH, THE DRAINS BEING AT DISTANCES FROM 15 TO 45 FEET APART.

THE distance between the drains is placed on the top of the page; the quantity of land to be drained is found in the first and fourth columns; and opposite any required quantity in which, under their respective headings, stands the number of rods and roods of drains in that quantity.

In calculating the Table, the length of the drains in each quantity is set down to the nearest quarter of a yard

The length of drains in any piece of land may be turned into local poles or roods of any given length, by multiplying the length found in the Table; if in rods, by  $5\frac{1}{2}$ , or if in roods, by 6; and dividing the product by the length of the given rood in yards.

**EXAMPLE.** It is proposed to drain a field containing 21 acres, 3 roods, and 14 poles, the drains to be 36 feet apart; what will be the length of the drains in rods of  $5\frac{1}{2}$  yards, and in roods of 6 yards?

Find 36 feet, the distance of the drains apart, on the top of the page,

	Rods.	Yds.		Rods.	Yds.
then opposite 21 acres stands	1540	0	and	1411	4
opposite 3 roods stands	55	0	and	50	$2\frac{1}{4}$
and opposite 14 poles stands	6	$2\frac{1}{4}$	and	5	$5\frac{1}{4}$
	<hr/>			<hr/>	
	1001	$2\frac{1}{4}$	and	1467	$5\frac{1}{4}$

Suppose it were required to know the length of drains in the above in poles or roods of 7 yards in length.

	Rods.	Yds.
Multiply	1467	$5\frac{1}{4}$
by		6
and divide by	7	$8807\ 4\frac{1}{4}$
Length required	1258	$1\frac{1}{4}$

TABLE II.—LENGTH OF DRAINS IN RODS AND ROODS.

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## Distances between the Drains 15 feet.

Land to be drained.	Length of Drains.				Land to be drained.	Length of Drains.			
	In Rods of 5½ Yards.		In Roods of 6 Yards.			In Rods of 5½ Yards.		In Roods of 6 Yards.	
Poles.	Rods.	Yds.	Roods.	Yds.	Acres.	Rods.	Yds.	Roods.	Yds.
1	1	0½	1	0	3	528	0	484	0
2	2	1	2	0	4	704	0	645	2
3	3	1½	3	0	5	880	0	806	4
4	4	2	4	0½	6	1056	0	968	0
5	5	2½	5	0½	7	1232	0	1129	2
6	6	3	6	0½	8	1408	0	1290	4
7	7	3½	7	0½	9	1584	0	1452	0
8	8	4	8	0½	10	1760	0	1613	2
9	9	5	9	0½	11	1936	0	1774	4
10	11	0	10	0½	12	2112	0	1936	0
11	12	0½	11	0½	13	2288	0	2097	2
12	13	1	12	0½	14	2464	0	2258	4
13	14	1½	13	0½	15	2640	0	2420	0
14	15	2	14	0½	16	2816	0	2581	2
15	16	2½	15	0½	17	2992	0	2743	4
16	17	3	16	0½	18	3168	0	2904	0
17	18	3½	17	0½	19	3344	0	3065	2
18	19	4	18	0½	20	3520	0	3226	4
19	20	5	19	1	21	3696	0	3388	0
20	22	0	20	1	22	3872	0	3549	2
21	23	0½	21	1	23	4048	0	3710	4
22	24	1	22	1	24	4224	0	3872	0
23	25	1½	23	1	25	4400	0	4033	2
24	26	2	24	1½	26	4576	0	4194	4
25	27	2½	25	1½	27	4752	0	4356	0
26	28	3	26	1½	28	4928	0	4517	2
27	29	3½	27	1½	29	5104	0	4678	4
28	30	4	28	1½	30	5280	0	4840	0
29	31	5	29	1½	31	5456	0	5001	2
30	33	0	30	1½	32	5632	0	5162	4
31	34	0½	31	1½	33	5808	0	5324	0
32	35	1	32	1½	34	5984	0	5485	2
33	36	1½	33	1½	35	6160	0	5646	4
34	37	2	34	1½	36	6336	0	5808	0
35	38	2½	35	1½	37	6512	0	5969	2
36	39	3	36	1½	38	6688	0	6130	4
37	40	3½	37	1½	39	6864	0	6292	0
38	41	4	38	1½	40	7040	0	6453	2
39	42	5	39	2	50	8800	0	8066	4
Rds. 1	44	0	40	2	60	10560	0	9680	0
2	88	0	80	4	70	12320	0	11293	2
3	132	0	121	0	80	14080	0	12906	4
Acr. 1	176	0	161	2	90	15840	0	14520	0
2	352	0	322	4	100	17600	0	16133	2



TABLE II.—LENGTH OF DRAINS IN RODS AND RODS.

Distance between the Drains 18 feet.						
Land to be drained.	Length of Drains.		Land to be drained.	Length of Drains.		
	In Rods of 5½ Yards.	In Rods of 6 Yards.		In Rods of 5½ Yards.	In Rods of 6 Yards.	
Poles.	Rods. Yds.	Rods. Yds.	Acres.	Rods. Yds.	Rods. Yds.	
1	0 5	0 5	3	440 0	403 2	
2	1 4½	1 4	4	586 3¾	537 4¾	
3	2 4	2 3	5	733 1½	672 1½	
4	3 3¾	3 2½	6	880 0	806 4	
5	4 3¼	4 1½	7	1026 3¾	941 0¾	
6	5 2¾	5 0½	8	1173 1½	1075 3¼	
7	6 2¼	5 5¼	9	1320 0	1210 0	
8	7 1¾	6 4¼	10	1466 3¾	1344 2¾	
9	8 1¼	7 3¼	11	1613 1½	1478 5¼	
10	9 1	8 2¾	12	1760 0	1613 2	
11	10 0½	9 1½	13	1906 3¾	1747 4¾	
12	11 0	10 0¾	14	2053 1½	1882 1½	
13	11 5	10 5¾	15	2200 0	2016 4	
14	12 4½	11 4¾	16	2346 3¾	2151 0¾	
15	13 4	12 3¾	17	2493 1½	2285 3¼	
16	14 3¾	13 2¾	18	2640 0	2420 0	
17	15 3¼	14 1½	19	2786 3¾	2554 2¾	
18	16 2¾	15 0¾	20	2933 1½	2688 5¼	
19	17 2¼	15 5¾	21	3080 0	2823 2	
20	18 1¾	16 4¾	22	3226 3¾	2957 4¾	
21	19 1¼	17 3¾	23	3373 1½	3092 1½	
22	20 1	18 3	24	3520 0	3226 4	
23	21 0½	19 2	25	3666 3¾	3361 0¾	
24	22 0	20 1	26	3813 1½	3495 3¼	
25	22 5	21 0	27	3960 0	3630 0	
26	23 4½	21 5	28	4106 3¾	3764 2¾	
27	24 4	22 4	29	4253 1½	3898 5¼	
28	25 3¾	23 3¼	30	4400 0	4033 2	
29	26 3¼	24 2½	31	4546 3¾	4167 4¾	
30	27 2¾	25 1½	32	4693 1½	4302 1½	
31	28 2¼	26 0¾	33	4840 0	4436 4	
32	29 1¾	26 5¼	34	4986 3¾	4571 0¾	
33	30 1¼	27 4¾	35	5133 1½	4705 3¼	
34	31 1	28 3¾	36	5280 0	4840 0	
35	32 0½	29 2¾	37	5426 3¾	4974 2¾	
36	33 0	30 1½	38	5573 1½	5108 5¼	
37	33 5	31 0¾	39	5720 0	5243 2	
38	34 4½	31 5¾	40	5866 3¾	5377 4¾	
39	35 4	32 4¾	50	7333 1½	6722 1½	
Rds. 1	36 3¾	33 3¾	60	8800 0	8066 4	
2	73 1½	67 1½	70	10266 3¾	9411 0¾	
3	110 0	100 5	80	11733 1½	10755 3¼	
Acr. 1	146 3¾	134 2¾	90	13200 0	12100 0	
2	293 1½	268 5¼	100	14666 3¾	13444 2¾	

TABLE II.—LENGTH OF DRAINS IN RODS AND ROODS.

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Distance between the Drains 21 feet.									
Land to be drained.	Length of Drains.				Land to be drained.	Length of Drains.			
	In Rods of 5½ Yards.		In Roods of 6 Yards.			In Rods of 5½ Yards.		In Roods of 6 Yards.	
Poles.	Rods.	Yds.	Roods.	Yds.	Acres.	Rods.	Yds.	Roods.	Yds.
1	0	4½	0	4½	3	377	0½	315	4½
2	1	3½	1	2½	4	502	4½	460	5½
3	2	2	2	1	5	628	3½	576	1½
4	3	0½	2	5½	6	754	1½	691	2½
5	3	5	3	3½	7	880	0	806	4
6	4	4	4	2	8	1005	4	921	5½
7	5	2½	5	0½	9	1131	2½	1037	0½
8	6	1½	5	4½	10	1257	0½	1152	2½
9	7	0½	6	3	11	1382	4½	1267	3½
10	7	4	7	1½	12	1508	3½	1382	5½
11	8	3½	7	5½	13	1634	1½	1498	0½
12	9	2½	8	3½	14	1760	0	1613	2
13	10	1½	9	2½	15	1885	4	1728	3½
14	11	0	10	0½	16	2011	2½	1843	4½
15	11	4½	10	4	17	2137	0½	1959	0½
16	12	3½	11	3½	18	2262	4½	2074	1½
17	13	2	12	1½	19	2388	3½	2189	3½
18	14	0½	12	5½	20	2514	1½	2304	4½
19	14	5	13	4	21	2640	0	2420	0
20	15	4	14	2½	22	2765	4	2535	1½
21	16	2½	15	0½	23	2891	2½	2650	2½
22	17	1½	15	5	24	3017	0½	2765	4½
23	18	0	16	3½	25	3142	4½	2880	5½
24	18	4½	17	1½	26	3268	3½	2996	1½
25	19	3½	18	0	27	3394	1½	3111	2½
26	20	2½	18	4½	28	3520	0	3226	4
27	21	1½	19	2½	29	3645	4	3341	5½
28	22	0	20	1	30	3771	2½	3457	0½
29	22	4½	20	5½	31	3897	0½	3572	2½
30	23	3½	21	3½	32	4022	4½	3687	3½
31	24	2	22	2	33	4148	3½	3802	5½
32	25	0½	23	0½	34	4274	1½	3918	0½
33	25	5	23	4½	35	4400	0	4033	2
34	26	4	24	3	36	4525	4	4148	3½
35	27	2½	25	1½	37	4651	2½	4263	4½
36	28	1½	25	5½	38	4777	0½	4379	0½
37	29	0½	26	4	39	4902	4½	4494	1½
38	29	4	27	2½	40	5028	3½	4609	3½
39	30	3½	28	0½	50	6285	4	5761	5½
Rds. 1	31	2½	28	4½	60	7542	4½	6914	1½
2	62	4½	57	3½	70	8800	0	8066	4
3	94	1½	86	2½	80	10057	0½	9219	0½
Ac. 1	125	4	115	1½	90	11314	1½	10371	2½
2	251	2½	230	2½	100	12571	2½	11523	4½

Distance between the Drains 24 feet.						
Land to be drained.	Length of Drains.		Land to be drained.	Length of Drains.		
	In Rods of 5½ Yards.	In Roods of 6 Yards.		In Rods of 5½ Yards.	In Roods of 6 Yards.	
Poles.	Rods. Yds.	Roods. Yds.	Acres.	Rods. Yds.	Roods. Yds.	
1	0 3½	0 3½	3	330 0	302 3	
2	1 2	1 1½	4	440 0	403 2	
3	2 0½	1 5¼	5	550 0	504 1	
4	2 4	2 3	6	660 0	605 0	
5	3 2½	3 1	7	770 0	705 5	
6	4 0	3 4½	8	880 0	806 4	
7	4 4	4 2½	9	990 0	907 3	
8	5 2	5 0½	10	1100 0	1008 2	
9	6 1	5 4	11	1210 0	1109 1	
10	6 4½	6 1½	12	1320 0	1210 0	
11	7 3	6 5½	13	1430 0	1310 5	
12	8 1½	7 3¼	14	1540 0	1411 4	
13	8 5	8 1¼	15	1650 0	1512 3	
14	9 3½	8 5	16	1760 0	1613 2	
15	10 1	9 2½	17	1870 0	1714 1	
16	11 0	10 0½	18	1980 0	1815 0	
17	11 3½	10 4¼	19	2090 0	1915 5	
18	12 2	11 2	20	2200 0	2016 4	
19	13 0½	11 5½	21	2310 0	2117 3	
20	13 4	12 3½	22	2420 0	2218 2	
21	14 2½	13 1½	23	2530 0	2319 1	
22	15 0	13 5¼	24	2640 0	2420 0	
23	15 4	14 3	25	2750 0	2520 5	
24	16 2	15 0½	26	2860 0	2621 4	
25	17 1	15 4½	27	2970 0	2722 3	
26	17 4½	16 2½	28	3080 0	2823 2	
27	18 3	17 0	29	3190 0	2924 1	
28	19 1½	17 3½	30	3300 0	3025 0	
29	19 5	18 1½	31	3410 0	3125 5	
30	20 3	18 5½	32	3520 0	3226 4	
31	21 1½	19 3¼	33	3630 0	3327 3	
32	22 0	20 1	34	3740 0	3428 2	
33	22 3½	20 4½	35	3850 0	3529 1	
34	23 2	21 2½	36	3960 0	3630 0	
35	24 0½	22 0½	37	4070 0	3730 5	
36	24 4	22 4	38	4180 0	3831 4	
37	25 2½	23 2	39	4290 0	3932 3	
38	26 0	23 5½	40	4400 0	4033 2	
39	26 4	24 3½	50	5500 0	5041 4	
Rds. 1	27 2½	25 1¼	60	6600 0	6050 0	
2	55 0	50 2½	70	7700 0	7058 2	
3	82 2½	75 3¼	80	8800 0	8066 4	
Acr. 1	110 0	100 5	90	9900 0	9075 0	
2	220 0	201 4	100	11000 0	10083 2	

TABLE II.—LENGTH OF DRAINS IN RODS AND ROODS.

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## Distance between the Drains 27 feet.

Land to be drained.	Length of Drains.				Land to be drained.	Length of Drains.			
	In Rods of 5½ Yards.		In Roods of 6 Yards.			In Rods of 5½ Yards.		In Roods of 6 Yards.	
Poles.	Rods.	Yds.	Roods.	Yds.	Acres.	Rods.	Yds.	Roods.	Yds.
1	0	3½	0	3½	3	293	1½	268	5½
2	1	1½	1	0½	4	391	0½	358	3
3	1	4½	1	4	5	488	5	448	1
4	2	2½	2	1½	6	586	3½	537	4½
5	3	0½	2	4½	7	684	2½	627	2½
6	3	3½	3	2½	8	782	1½	717	0½
7	4	1½	3	5½	9	880	0	806	4
8	4	5	4	3	10	977	4½	896	1½
9	5	2½	5	0½	11	1075	3	985	5½
10	6	0½	5	3½	12	1173	1½	1075	3½
11	6	4	6	1	13	1271	0½	1165	1
12	7	1½	6	4½	14	1368	5	1254	5
13	7	5½	7	1½	15	1466	3½	1344	2½
14	8	3	7	5	16	1564	2½	1434	0½
15	9	1	8	2½	17	1662	1½	1523	4½
16	9	4½	8	5½	18	1760	0	1613	2
17	10	2½	9	3½	19	1857	4½	1702	5½
18	11	0	10	0½	20	1955	3	1792	3½
19	11	3½	10	3½	21	2053	1½	1882	1½
20	12	1½	11	1½	22	2151	0½	1971	5
21	12	4½	11	4½	23	2248	5	2061	3
22	13	2½	12	2	24	2346	3½	2151	0½
23	14	0½	12	5½	25	2444	2½	2240	4½
24	14	3½	13	2½	26	2542	1½	2330	2½
25	15	1½	14	0	27	2640	0	2420	0
26	15	5	14	3½	28	2737	4½	2509	3½
27	16	2½	15	0½	29	2835	3	2599	1½
28	17	0½	15	4	30	2933	1½	2688	5½
29	17	4	16	1½	31	3031	0½	2778	3
30	18	1½	16	4½	32	3128	5	2868	1
31	18	5½	17	2½	33	3226	3½	2957	4½
32	19	3	17	5½	34	3324	2½	3047	2½
33	20	1	18	3	35	3422	1½	3137	0½
34	20	4½	19	0½	36	3520	0	3226	4
35	21	2½	19	3½	37	3617	4½	3316	1½
36	22	0	20	1	38	3715	3	3405	5½
37	22	3½	20	4½	39	3813	1½	3495	3½
38	23	1½	21	1½	40	3911	0½	3585	1
39	23	4½	21	5	50	4888	5	4481	3
Rds. 1	24	2½	22	2½	60	5866	3½	5377	4½
2	48	5	44	5	70	6844	2½	6274	0½
3	73	1½	67	1½	80	7822	1½	7170	2½
Ac. 1	97	4½	89	3½	90	8800	0	8066	4
2	195	3	179	1½	100	9777	4½	8962	5½

## Distance between the Drains 30 feet.

Land to be drained.	Length of Drains.		Land to be drained.	Length of Drains.	
	In Rods of 5½ Yards.	In Roods of 6 Yards.		In Rods of 5½ Yards.	In Roods of 6 Yards.
Poles.	Rods. Yds.	Roods. Yds.	Acres.	Rods. Yds.	Roods. Yds.
1	0 3	0 3	3	204 0	242 0
2	1 0½	1 0	4	352 0	322 4
3	1 3½	1 3	5	440 0	403 2
4	2 1	2 0	6	528 0	484 0
5	2 4	2 3	7	616 0	564 4
6	3 1½	3 0½	8	704 0	645 2
7	3 4½	3 3½	9	792 0	726 0
8	4 2	4 0½	10	880 0	806 4
9	4 5½	4 3½	11	968 0	887 2
10	5 2½	5 0½	12	1056 0	968 0
11	6 0	5 3½	13	1144 0	1048 4
12	6 3½	6 0½	14	1232 0	1129 2
13	7 0½	6 3½	15	1320 0	1210 0
14	7 3½	7 0½	16	1408 0	1290 4
15	8 1	7 3½	17	1496 0	1371 2
16	8 4½	8 0½	18	1584 0	1452 0
17	9 2	8 3½	19	1672 0	1532 4
18	9 5	9 0½	20	1760 0	1613 2
19	10 2½	9 3½	21	1848 0	1694 0
20	11 0	10 0½	22	1936 0	1774 4
21	11 3	10 3½	23	2024 0	1855 2
22	12 0½	11 0½	24	2112 0	1936 0
23	12 3½	11 3½	25	2200 0	2016 4
24	13 1	12 0½	26	2288 0	2097 2
25	13 4	12 3½	27	2376 0	2178 0
26	14 1½	13 0½	28	2464 0	2258 4
27	14 4½	13 3½	29	2552 0	2339 2
28	15 2	14 0½	30	2640 0	2420 0
29	15 5½	14 3½	31	2728 0	2500 4
30	16 2½	15 0½	32	2816 0	2581 2
31	17 0	15 3½	33	2904 0	2662 0
32	17 3½	16 0½	34	2992 0	2742 4
33	18 0	16 3½	35	3080 0	2823 2
34	18 3½	17 0½	36	3168 0	2904 0
35	19 1	17 3½	37	3256 0	2984 4
36	19 4½	18 1	38	3344 0	3065 2
37	20 2	18 4	39	3432 0	3146 0
38	20 5	19 1	40	3520 0	3226 4
39	21 2½	19 4	50	4400 0	4033 2
Rds. 1	22 0	20 1	60	5280 0	4840 0
2	44 0	40 2	70	6160 0	5646 4
3	66 0	60 3	80	7040 0	6453 2
Acr. 1	88 0	80 4	90	7920 0	7260 0
2	176 0	161 2	100	8800 0	8066 4

TABLE II.—LENGTH OF DRAINS IN RODS AND ROODS.

## Distance between the Drains 33 feet.

Land to be drained.	Length of drains.		Land to be drained.	Length of Drains.	
	In Rods of 5½ Yards.	In Roods of 6 Yards.		In Rods of 5½ Yards.	In Roods of 6 Yards.
Poles.	Rods. Yds.	Roods. Yds.	Acres.	Rods. Yds.	Roods. Yds.
1	0 2½	0 2½	3	240 0	220 0
2	1 0	0 5½	4	320 0	293 2
3	1 2½	1 2½	5	400 0	366 4
4	2 0	1 5	6	480 0	440 0
5	2 2½	2 1½	7	560 0	513 2
6	3 0	2 4½	8	640 0	586 4
7	3 2½	3 1½	9	720 0	660 0
8	4 0	3 4	10	800 0	733 2
9	4 2½	4 0½	11	880 0	806 4
10	5 0	4 3½	12	960 0	880 0
11	5 2½	5 0½	13	1040 0	953 2
12	6 0	5 3	14	1120 0	1026 4
13	6 2½	5 5½	15	1200 0	1100 0
14	7 0	6 2½	16	1280 0	1173 2
15	7 2½	6 5½	17	1360 0	1246 4
16	8 0	7 2	18	1440 0	1320 0
17	8 2½	7 4½	19	1520 0	1393 2
18	9 0	8 1½	20	1600 0	1466 4
19	9 2½	8 4½	21	1680 0	1540 0
20	10 0	9 1	22	1760 0	1613 2
21	10 2½	9 3½	23	1840 0	1686 4
22	11 0	10 0½	24	1920 0	1760 0
23	11 2½	10 3½	25	2000 0	1833 2
24	12 0	11 0	26	2080 0	1906 4
25	12 2½	11 2½	27	2160 0	1980 0
26	13 0	11 5½	28	2240 0	2053 2
27	13 2½	12 2½	29	2320 0	2126 4
28	14 0	12 5	30	2400 0	2200 0
29	14 2½	13 1½	31	2480 0	2273 2
30	15 0	13 4½	32	2560 0	2346 4
31	15 2½	14 1½	33	2640 0	2420 0
32	16 0	14 4	34	2720 0	2493 2
33	16 2½	15 0½	35	2800 0	2566 4
34	17 0	15 3½	36	2880 0	2640 0
35	17 2½	16 0½	37	2960 0	2713 2
36	18 0	16 3	38	3040 0	2786 4
37	18 2½	16 5½	39	3120 0	2860 0
38	19 0	17 2½	40	3200 0	2933 2
39	19 2½	17 5½	50	4000 0	3666 4
Rds. 1	20 0	18 2	60	4800 0	4400 0
2	40 0	36 4	70	5600 0	5133 2
3	60 0	55 0	80	6400 0	5866 4
Acr. 1	80 0	73 2	90	7200 0	6600 0
2	160 0	146 4	100	8000 0	7333 2

TABLE II.—LENGTH OF DRAINS IN RODS AND ROODS.

Distance between the Drains 36 feet.							
Land to be drained.	Length of Drains.		Land to be drained.	Length of Drains.		Land to be drained.	Length of Drains.
	In Rods of 5½ Yards.	In Roods of 6 Yards.		In Rods of 5½ Yards.	In Roods of 6 Yards.		
Poles.	Rods. Yds.	Roods. Yds.	Acres.	Rods. Yds.	Roods. Yds.		
1	0 2½	0 2½	3	220 0	201 4		
2	0 5	0 5	4	293 1½	268 5½		
3	1 2	1 1½	5	366 3½	336 0½		
4	1 4½	1 4	6	440 0	403 2		
5	2 1½	2 0½	7	513 1½	470 3½		
6	2 4	2 3	8	586 3½	537 4½		
7	3 1½	2 5½	9	660 0	605 0		
8	3 3½	3 2½	10	733 1½	672 1½		
9	4 0½	3 4½	11	806 3½	739 2½		
10	4 3½	4 1½	12	880 0	806 4		
11	5 0½	4 3½	13	953 1½	873 5½		
12	5 2½	5 0	14	1026 3½	941 0½		
13	5 5½	5 2½	15	1100 0	1008 2		
14	6 2½	5 5½	16	1173 1½	1075 3½		
15	6 4½	6 1½	17	1246 3½	1142 4½		
16	7 1½	6 4½	18	1320 0	1210 0		
17	7 4½	7 0½	19	1393 1½	1277 1½		
18	8 1½	7 3½	20	1466 3½	1344 2½		
19	8 4	7 5½	21	1540 0	1411 4		
20	9 1	8 2½	22	1613 1½	1478 5½		
21	9 3½	8 5	23	1686 3½	1546 0½		
22	10 0½	9 1½	24	1760 0	1613 2		
23	10 3	9 4	25	1833 1½	1680 3½		
24	11 0	10 0½	26	1906 3½	1747 4½		
25	11 2½	10 3	27	1980 0	1815 0		
26	11 5	10 5½	28	2053 1½	1882 1½		
27	12 2	11 2	29	2126 3½	1949 2½		
28	12 4½	11 4½	30	2200 0	2016 4		
29	13 1½	12 1	31	2273 1½	2083 5½		
30	13 4	12 3½	32	2346 3½	2151 0½		
31	14 1½	13 0½	33	2420 0	2218 2		
32	14 3½	13 2½	34	2493 1½	2285 3½		
33	15 0½	13 5½	35	2566 3½	2352 4½		
34	15 3½	14 1½	36	2640 0	2420 0		
35	16 0½	14 4½	37	2713 1½	2487 1½		
36	16 2½	15 0½	38	2786 3½	2554 2½		
37	16 5½	15 3½	39	2860 0	2621 4		
38	17 2½	15 5½	40	2933 1½	2688 5½		
39	17 4½	16 2½	50	3666 3½	3361 0½		
Rds. 1	18 1½	16 4½	60	4400 0	4033 2		
2	36 3½	33 3½	70	5133 1½	4705 3½		
3	55 0	50 2½	80	5866 3½	5377 4½		
Acr. 1	73 1½	67 1½	90	6600 0	6050 0		
2	146 3½	134 2½	100	7333 1½	6722 1½		

TABLE II.—LENGTH OF DRAINS IN RODS AND ROODS.

Distance between the Drains 39 feet.									
Land to be drained.	Length of Drains.				Land to be drained.	Length of Drains.			
	In Rods of 5½ Yards.		In Roods of 6 Yards.			In Rods of 5½ Yards.		In Roods of 6 Yards.	
Poles.	Rods.	Yds.	Roods.	Yds.	Acres.	Rods.	Yds.	Roods.	Yds.
1	0	2½	0	2½	3	203	0½	186	1
2	0	4½	0	4½	4	270	4½	248	1½
3	1	1½	1	1	5	338	2½	310	1½
4	1	3½	1	3½	6	406	0½	372	1½
5	2	0½	1	5½	7	473	4½	434	2½
6	2	3	2	2	8	541	3	496	2½
7	2	5½	2	4½	9	609	1½	558	2½
8	3	2	3	0½	10	676	5	620	3
9	3	4½	3	3	11	744	3½	682	3½
10	4	1½	3	5½	12	812	1½	744	3½
11	4	3½	4	1½	13	880	0	806	4
12	5	0½	4	4	14	947	3½	868	4½
13	5	2½	5	0½	15	1015	2	930	4½
14	5	5	5	2½	16	1083	0½	992	5
15	6	2	5	5	17	1150	4½	1054	5½
16	6	4½	6	1½	18	1218	2½	1116	5½
17	7	1	6	3½	19	1286	0½	1178	5½
18	7	3½	7	0	20	1353	4½	1241	0½
19	8	0½	7	2½	21	1421	3	1303	0½
20	8	2½	7	4½	22	1489	1½	1365	0½
21	8	4½	8	0½	23	1556	5	1427	1
22	9	1½	8	3½	24	1624	3½	1489	1½
23	9	4	8	5½	25	1692	1½	1551	1½
24	10	0½	9	1½	26	1760	0	1613	2
25	10	3½	9	4½	27	1827	3½	1675	2½
26	11	0	10	0½	28	1895	2	1737	2½
27	11	2½	10	2½	29	1963	0½	1799	3
28	11	4½	10	5½	30	2030	4½	1861	3½
29	12	1½	11	1½	31	2098	2½	1923	3½
30	12	3½	11	3½	32	2166	0½	1985	3½
31	13	0½	12	0½	33	2233	4½	2047	4½
32	13	3	12	2½	34	2301	3	2109	4½
33	13	5½	12	4½	35	2369	1½	2171	4½
34	14	2	13	1	36	2436	5	2233	5
35	14	4½	13	3½	37	2504	3½	2295	5½
36	15	1½	13	5½	38	2572	1½	2357	5½
37	15	3½	14	2	39	2640	0	2420	0
38	16	0½	14	4½	40	2707	3½	2482	0½
39	16	2½	15	0½	50	3384	3½	3102	3½
Rds. 1	16	5	15	3	60	4061	3	3723	0
2	33	4½	31	0½	70	4738	2½	4343	3½
3	50	4½	46	3½	80	5415	2	4964	0
Acr. 1	67	3½	62	0½	90	6092	1½	5584	3½
2	135	2	124	0½	100	6769	1½	6205	0



TABLE II.—LENGTH OF DRAINS IN RODS AND ROODS.

Distance between the Drains 42 feet.									
Land to be drained.	Length of Drains.				Land to be drained.	Length of Drains.			
	In Rods of 5½ Yards.		In Rods of 6 Yards.			In Rods of 5½ Yards.		In Rods of 6 Yards.	
Poles.	Rods.	Yds.	Roods.	Yds.	Acres.	Rods.	Yds.	Roods.	Yds.
1	0	2½	0	2½	3	188	3½	172	5½
2	0	4½	0	4½	4	251	2½	230	2½
3	1	1	1	0½	5	314	1½	288	0½
4	1	3½	1	2½	6	377	0½	345	4½
5	1	5½	1	4½	7	440	0	403	2
6	2	2	2	1	8	502	4½	460	5½
7	2	4	2	3	9	565	½	518	3½
8	3	0½	2	5½	10	628	3½	576	1½
9	3	3	3	1½	11	691	2½	633	4½
10	3	5	3	3½	12	754	1½	691	2½
11	4	1½	3	5½	13	817	0½	749	0½
12	4	4	4	2	14	880	0	806	4
13	5	0½	4	4	15	942	4½	864	1½
14	5	2½	5	0½	16	1005	4	921	5½
15	5	5	5	2½	17	1068	3½	979	3½
16	6	1½	5	4½	18	1131	2½	1037	0½
17	6	3½	6	0½	19	1194	1½	1094	4½
18	7	0½	6	3	20	1257	0½	1152	2½
19	7	2½	6	5	21	1320	0	1210	0
20	7	4½	7	1½	22	1382	4½	1267	3½
21	8	1½	7	3½	23	1445	4	1325	1½
22	8	3½	7	5½	24	1508	3½	1382	5½
23	9	0½	8	1½	25	1571	2½	1440	2½
24	9	2½	8	3½	26	1634	1½	1498	0½
25	9	4½	9	0	27	1697	0½	1555	4½
26	10	1½	9	2½	28	1760	0	1613	2
27	10	3½	9	4½	29	1822	4½	1670	5½
28	11	0	10	0½	30	1885	4	1728	3½
29	11	2½	10	2½	31	1948	3½	1786	1½
30	11	4½	10	4½	32	2011	2½	1843	4½
31	12	1	11	1	33	2074	1½	1901	2½
32	12	3½	11	3½	34	2137	0½	1959	0½
33	12	5½	11	5½	35	2200	0	2016	4
34	13	2	12	1½	36	2262	4½	2074	1½
35	13	4	12	3½	37	2325	4	2131	5½
36	14	0½	12	5½	38	2388	3½	2189	3½
37	14	3	13	2	39	2451	2½	2247	0½
38	14	5	13	4	40	2514	1½	2304	4½
39	15	1½	14	0½	50	3142	4½	2880	5½
Rds. 1	15	4	14	2½	60	3771	2½	3457	0½
2	31	2½	28	4½	70	4400	0	4033	2
3	47	0½	43	1½	80	5028	3½	4609	3½
Ac. 1	62	4½	57	3½	90	5657	0½	5185	4½
2	125	4	115	1½	100	6285	4	5761	5½

TABLE II.—LENGTH OF DRAINS IN RODS AND ROODS.

21

## Distance between the Drains 45 feet.

Land to be drained.	Length of Drains.		Land to be drained.	Length of Drains.	
	In Rods of 5½ Yards.	In Roods of 6 Yards.		In Rods of 5½ Yards.	In Roods of 6 Yards.
Poles.	Rods. Yds.	Roods. Yds.	Acres.	Rods. Yds.	Roods. Yds.
1	0 2	0 2	3	176 0	161 2
2	0 4	0 4	4	234 3½	215 0½
3	1 0½	1 0	5	293 1½	263 5½
4	1 2½	1 2	6	352 0	322 4
5	1 4½	1 4	7	410 3½	376 2½
6	2 1	2 0	8	469 1½	430 1½
7	2 3	2 2	9	528 0	484 0
8	2 5½	2 4½	10	586 3½	537 4½
9	3 1½	3 0½	11	645 1½	591 3½
10	3 3½	3 2½	12	704 0	645 2
11	4 0½	3 4½	13	762 3½	699 0½
12	4 2½	4 0½	14	821 1½	752 5½
13	4 4½	4 2½	15	880 0	806 4
14	5 0½	4 4½	16	938 3½	860 2½
15	5 2½	5 0½	17	997 1½	914 1½
16	5 4½	5 2½	18	1056 0	968 0
17	6 1½	5 4½	19	1114 3½	1021 4½
18	6 3½	6 0½	20	1173 1½	1075 3½
19	6 5½	6 2½	21	1232 0	1129 2
20	7 1½	6 4½	22	1290 3½	1183 0½
21	7 3½	7 0½	23	1349 1½	1236 5½
22	8 0½	7 2½	24	1408 0	1290 4
23	8 2½	7 4½	25	1466 3½	1344 2½
24	8 4½	8 0½	26	1525 1½	1398 1½
25	9 1	8 2½	27	1584 0	1452 0
26	9 3	8 4½	28	1642 3½	1505 4½
27	9 5	9 0½	29	1701 1½	1559 3½
28	10 1½	9 2½	30	1760 0	1613 2
29	10 3½	9 4½	31	1818 3½	1667 0½
30	11 0	10 0½	32	1877 1½	1720 5½
31	11 2	10 2½	33	1936 0	1771 4
32	11 4	10 4½	34	1994 3½	1828 2½
33	12 0½	11 0½	35	2053 1½	1882 1½
34	12 2½	11 2½	36	2112 0	1936 0
35	12 4½	11 4½	37	2170 3½	1989 4½
36	13 1	12 0½	38	2229 1½	2043 3½
37	13 3	12 2½	39	2288 0	2097 2
38	13 5½	12 4½	40	2346 3½	2151 0½
39	14 1½	13 0½	50	2933 1½	2688 5½
Rds. 1	14 3½	13 2½	60	3520 0	3226 4
2	29 1½	26 5½	70	4106 3½	3764 2½
3	44 0	40 2	80	4693 1½	4302 1½
Ac. 1	58 3½	53 4½	90	5280 0	4840 0
2	117 1½	107 3½	100	5866 3½	5377 4½

### TABLE III.

SHOWING THE NUMBER OF TILES OR PIPES OF 12, 13, 14, 15, 16,  
AND 18 INCHES IN LENGTH, THAT ARE REQUIRED TO LAY ANY LENGTH  
OF DRAINS, FROM 1 TO 5000 STATUTE RODS OF  $5\frac{1}{2}$  YARDS, AND 1  
TO 5000 ROODS OF 6 YARDS; ALSO THE NUMBER REQUIRED TO LAY  
FROM 1 TO 30,000 YARDS.

THE first and second pages of the Table are occupied with the number of tiles required for statute rods, and for the same lengths in yards; the third and fourth pages contain the number required for roods of 6 yards, and for the same lengths in yards.

IN the first and second pages, the first column on the left hand contains the length of drains in statute rods; the first column of the third and fourth pages contains the length of drains in roods of 6 yards; the second column contains the length of drains in yards; and columns 3 to 8 contain the number of tiles of each length required to lay the number of rods, roods, and yards of drains in the first and second columns.

AS there is no allowance made for waste and breakage of tiles, 3 or 4 per 100 may be added to the number given in the Table.

WHERE fractions occur in the calculation they are reckoned 1.

EXAMPLES. 1. How many tiles, 14 inches long, are required to lay 653 statute rods of drains?

Find 600 in the second page of the Table under rods,	
opposite which, under 14 inches, stands . . .	8486
And opposite 53 rods stands . . . . .	<u>750</u>
	9236
Add for breakage, say 4 per 100 . . . . .	<u>369</u>
	9605

Number of tiles required, 9605

2. How many 15 inch-pipes are required to lay 549 roods of drains, each 6 yards in length?

In the fourth page of the Table, opposite 500 roods,	
under 15 inches, stands . . . . .	7200
And opposite 49 roods stands . . . . .	<u>706</u>
	7906
Add for breakage three per 100 . . . . .	<u>237</u>

Number of pipes required, 8143

3. How many tiles, 13 inches long, are required to lay 5720 yards of drains?

In the second page of the Table, under yards, is found	
5500, opposite which, under 13 inches, stands . .	15231
And opposite 220 stands . . . . .	<u>610</u>
	15841
Add for waste, three per 100 . . . . .	<u>475</u>
	16316

Number of tiles required, 16316

TABLE III.—TILES REQUIRED FOR DRAINS.

23

Length of Drains.		Number of Tiles required.					
In Stat. Rods of 6½ Yards.	In Yards.	Length 12 in.	Length 13 in.	Length 14 in.	Length 15 in.	Length 16 in.	Length 18 in.
	1	3	3	3	3	3	2
	2	6	6	6	5	5	4
	3	9	9	8	8	7	6
	4	12	12	11	10	9	8
	5	15	14	13	12	12	10
1	5½	17	16	15	14	13	11
	6	18	17	16	15	14	12
	7	21	20	18	17	16	14
	8	24	23	21	20	18	16
	9	27	25	24	22	21	18
	10	30	28	26	24	23	20
2	11	33	31	29	27	25	22
3	16½	50	46	43	40	38	33
4	22	66	61	57	53	50	44
5	27½	83	77	71	66	62	55
6	33	99	92	85	80	75	66
7	38½	116	107	99	93	87	77
8	44	132	122	114	106	99	88
9	49½	149	138	128	119	112	99
10	55	165	153	142	132	124	110
11	60½	182	168	156	146	137	121
12	66	198	183	170	159	149	132
13	71½	215	198	184	172	161	143
14	77	231	214	198	185	174	154
15	82½	248	229	213	198	186	165
16	88	264	244	227	212	198	176
17	93½	281	259	241	225	211	187
18	99	297	275	255	238	223	198
19	104½	314	290	269	251	236	209
20	110	330	305	283	264	248	220
21	115½	347	320	297	278	260	231
22	121	363	336	312	291	273	242
23	126½	380	351	326	304	285	253
24	132	396	366	340	317	297	264
25	137½	413	381	354	330	310	275
26	143	429	396	368	344	322	286
27	148½	446	412	382	357	335	297
28	154	462	427	396	370	347	308
29	159½	479	442	411	383	358	319
30	165	495	457	425	396	372	330
31	170½	512	473	439	410	384	341
32	176	528	488	453	423	396	352
33	181½	545	503	466	436	409	363
34	187	561	518	481	449	421	374
35	192½	578	534	495	462	434	385

TABLE III.—TILES REQUIRED FOR DRAINS.

Length of Drains.		Number of Tiles required.					
In Stat. Rods of 5½ Yards.	In Yards.	Length 12 in.	Length 13 in.	Length 14 in.	Length 15 in.	Length 16 in.	Length 18 in.
36	198	594	549	510	476	446	396
37	203½	611	564	524	489	458	407
38	209	627	579	538	502	471	418
39	214½	644	594	552	515	483	429
40	220	660	610	566	528	495	440
41	225½	677	625	580	542	508	451
42	231	693	640	594	555	520	462
43	236½	710	655	609	568	533	473
44	242	726	671	623	581	545	484
45	247½	743	686	637	594	557	495
46	253	759	701	651	608	570	506
47	258½	776	716	665	621	582	517
48	264	792	732	679	634	594	528
49	269½	809	747	693	647	607	539
50	275	825	762	708	660	619	550
51	280½	842	777	722	674	632	561
52	286	858	792	736	687	644	572
53	291½	875	808	750	700	656	583
54	297	891	823	764	713	669	594
55	302½	908	838	778	726	681	605
56	308	924	853	792	740	693	616
57	313½	941	869	807	753	706	627
58	319	957	884	821	764	718	638
59	324½	974	899	835	779	731	649
60	330	990	914	849	792	743	660
61	335½	1007	930	863	806	755	671
62	341	1023	945	877	819	768	682
63	346½	1040	960	891	832	780	693
64	352	1056	975	906	845	792	704
65	357½	1073	990	920	858	805	715
70	385	1155	1067	990	924	867	770
80	440	1320	1219	1132	1056	990	880
90	495	1485	1371	1273	1188	1114	990
100	550	1650	1524	1415	1320	1238	1100
200	1100	3300	3047	2829	2640	2475	2200
300	1650	4950	4570	4243	3960	3713	3300
400	2200	6600	6093	5658	5280	4950	4400
500	2750	8250	7616	7072	6600	6188	5500
600	3300	9900	9139	8486	7920	7425	6600
700	3850	11550	10662	9900	9240	8663	7700
800	4400	13200	12185	11315	10560	9900	8800
900	4950	14850	13708	12729	11880	11138	9900
1000	5500	16500	15231	14143	13200	12375	11000
3000	16500	49500	45693	42429	39600	37125	33000
5000	27500	82500	76154	70715	66000	61875	55000

TABLE III.—TILES REQUIRED FOR DRAINS.

Length of Drains.		Number of Tiles required.					
In Roods of 6 Yds.	In Yards.	Length 12 in.	Length 13 in.	Length 14 in.	Length 15 in.	Length 16 in.	Length 18 in.
	1	3	3	3	3	3	2
	2	6	6	6	5	5	4
	3	9	9	8	8	7	6
	4	12	12	11	10	9	8
	5	15	14	13	12	12	10
1	6	18	17	16	15	14	12
	7	21	20	18	17	16	14
	8	24	23	21	20	18	16
	9	27	25	24	22	21	18
	10	30	28	26	24	23	20
	11	33	31	29	27	25	22
2	12	36	34	31	29	27	24
3	18	54	50	47	44	41	36
4	24	72	67	62	58	54	48
5	30	90	84	78	72	68	60
6	36	108	100	93	87	81	72
7	42	126	117	108	101	95	84
8	48	144	133	124	116	108	96
9	54	162	150	139	130	122	108
10	60	180	167	155	144	135	120
11	66	198	183	170	159	149	132
12	72	216	200	186	173	162	144
13	78	234	216	201	188	176	156
14	84	252	233	216	202	189	163
15	90	270	250	232	216	203	180
16	96	288	266	247	231	216	192
17	102	306	283	263	245	230	204
18	108	324	300	278	260	243	216
19	114	342	316	294	274	257	228
20	120	360	333	309	288	270	240
21	126	378	349	324	303	284	252
22	132	396	366	340	317	297	264
23	138	414	383	355	332	311	276
24	144	432	399	371	346	324	288
25	150	450	416	386	360	338	300
26	156	468	432	402	375	351	312
27	162	486	449	417	389	365	324
28	168	504	466	432	404	378	336
29	174	522	482	448	418	392	348
30	180	540	499	463	432	405	360
31	186	558	516	479	447	419	372
32	192	576	532	494	461	432	384
33	198	594	549	510	476	446	396
34	204	612	565	525	490	459	408
35	210	630	582	540	504	473	420

TABLE III.—TILES REQUIRED FOR DRAINS.

Length of Drains.		Number of Tiles required.					
In Roods of 6 Yds.	In Yards.	Length 12 in.	Length 13 in.	Length 14 in.	Length 15 in.	Length 16 in.	Length 18 in.
36	216	648	599	556	519	486	432
37	222	666	615	571	533	500	444
38	228	684	632	587	548	513	456
39	234	702	648	602	562	527	468
40	240	720	665	618	576	540	480
41	246	738	682	633	591	554	492
42	252	756	698	648	605	567	504
43	258	774	715	664	620	581	516
44	264	792	732	679	634	594	528
45	270	810	748	695	648	608	540
46	276	828	765	710	663	621	552
47	282	846	781	726	677	635	564
48	288	864	798	741	692	648	576
49	294	882	815	756	706	662	588
50	300	900	831	772	720	675	600
51	306	918	848	787	735	689	612
52	312	936	864	803	749	702	624
53	318	954	881	818	764	706	636
54	324	972	898	834	778	729	648
55	330	990	914	849	792	743	660
56	336	1008	931	864	807	756	672
57	342	1026	948	880	821	770	684
58	348	1044	964	895	836	783	696
59	354	1062	981	911	850	797	708
60	360	1080	997	926	864	810	720
61	366	1098	1014	942	879	824	732
62	372	1116	1031	957	893	837	744
63	378	1134	1047	972	908	851	756
64	384	1152	1064	988	922	864	768
65	390	1170	1080	1003	936	878	780
70	420	1260	1164	1080	1008	945	840
80	480	1440	1330	1235	1152	1080	960
90	540	1620	1496	1389	1296	1215	1080
100	600	1800	1662	1543	1440	1350	1200
200	1200	3600	3324	3086	2880	2700	2400
300	1800	5400	4985	4629	4320	4050	3600
400	2400	7200	6647	6172	5760	5400	4800
500	3000	9000	8308	7715	7200	6750	6000
600	3600	10800	9970	9253	8640	8100	7200
700	4200	12600	11631	10800	10080	9450	8400
800	4800	14400	13293	12343	11520	10800	9600
900	5400	16200	14954	13886	12960	12150	10800
1000	6000	18000	16616	15429	14400	13500	12000
3000	18000	54000	49847	46286	43200	40500	36000
5000	30000	90000	83077	77143	72000	67500	60000

## TABLE IV.

**SHOWS THE CUBIC OR SOLID CONTENT OF DIGGING IN DRAINS OR  
DITCHES, FROM 9 INCHES TO 7 FEET IN DEPTH, 6 INCHES TO 5 FEET  
6 INCHES IN WIDTH, AND  $\frac{1}{2}$  YARD TO 1000 YARDS IN LENGTH.**

THE depths are placed on the top of the pages, the widths on the top of the columns, and the lengths in the first column on the left hand; and opposite each length, under the various widths on the top of the columns, at the depth, on the top of the page, stands the solid content in yards and feet.

As drains and ditches are wider at top than bottom, the mean width must be taken before finding the content by the Table; this is done by adding the widths at top and bottom, and dividing the sum by 2.

If any required dimension is not found in the Table, it may be made up by adding together two dimensions; for example, for a depth of 3 feet 4 inches, the contents for 10 inches and 2 feet 6 inches may be added together; for 3 feet 8 inches, the contents for 1 foot 2 inches and 2 feet 6 inches, &c. Or it may be sometimes more convenient to find the content for the half, or for double the required dimension, such as for a depth of 2 feet 8 inches, take twice the content for 1 foot 4 inches, and for a width of 2 feet 9 inches, take half the content for 5 feet 6 inches, &c. Or, if found more suitable, the content of one dimension may be subtracted from another; thus, if a depth of 4 feet 4 inches is required, the content of 1 foot 2 inches may be subtracted from the content of 5 feet 6 inches, &c. Or, the width may be used for the depth, and the depth, in that case, for the width; as, for example, 200 yards long, and 5 feet 6 inches deep, by 2 feet 6 inches wide = 305 yards 15 feet, and 200 yards long, and 5 feet 6 inches wide by 2 feet 6 inches deep is also 305 yards 15 feet. Any required length may also be made up, by doubling, halving, or adding together the contents of two or more lengths, as is found most convenient.

**NOTE.** In adding together two contents, or in subtracting one content from another, it must be remembered that 27 solid feet make one solid yard.

In calculating the Table, fractions in the content, of  $\frac{1}{2}$  foot and under are neglected, when they exceed  $\frac{1}{2}$  foot they are reckoned 1.



**EXAMPLES.** 1. Required the solid content of digging in a drain 3 feet 6 inches deep, 7 inches wide at bottom, 13 inches wide at top, and 500 yards in length?

To find the mean width,  $7 + 13 = 20 \div 2 = 10$  inches mean width; then find 3 feet 6 inches, the depth, on the top of a page, and opposite 500 yards, under 10 inches, the mean width, stands 162 yards 1 foot, the solid content.

2. Required the solid content of digging in a drain 225 yards in length, 6 feet deep, and top and bottom widths 2 feet 6 inches and 1 foot 6 inches?

First,  $2\frac{1}{2}$  feet  $+ 1\frac{1}{2}$  foot  $= 4 \div 2 = 2$  feet, mean width.

Then find 6 feet, the depth, on the top of

the page, and opposite 200 yards in length,	Yards.	Feet.
under 2 feet mean width, stands . . .	266	18
And opposite 25 yards stands . . .	33	9

Solid content,	300	0
----------------	-----	---

3. Required the solid content of digging in a drain 3 feet 10 inches deep, width at top and bottom 14 and 8 inches, and 1000 yards long?

$14 + 8 = 22 \div 2 = 11$  inches mean width; then, as 3 feet 10 inches, the depth, is not found in the Table, take the two depths, of 3 feet, and 10 inches, separately.

Thus, at a depth of 3 feet, opposite 1000

yards, under the mean width 11 inches,	Yards.	Feet.
stands . . . . .	305	15

And at a depth of 10 inches, opposite 1000

yards, under width 11 inches, stands . . .	84	24
--	----	----

The solid content,	300	12
--------------------	-----	----

4. Required the solid content of digging in a ditch 700 yards in length, 5 feet deep, width at bottom 2 feet, and at top 12 feet?

$2 + 12 = 14 \div 2 = 7$  feet mean width; but as 7 feet, the mean width, is not in the Table, we may take the width as the depth, and the depth as the width; and the lengths of 200 and 500 yards = 700.

Thus, at a depth of 7 feet, opposite 200 yards,

under 5 feet wide, stands . . . . .	777	21
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And opposite 500 yards stands . . . . .	1944	12
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The solid content,	2722	6
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TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length.	Depth 9 inches.							
	Width 6 inches.	Width 7 inches.	Width 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
$\frac{1}{2}$	0 1	0 1	0 1	0 1	0 1	0 1	0 1	0 2
1	0 1	0 1	0 1	0 2	0 2	0 2	0 2	0 3
2	0 2	0 3	0 3	0 3	0 4	0 4	0 4	0 7
3	0 3	0 4	0 4	0 5	0 6	0 6	0 7	0 10
4	0 4	0 5	0 6	0 7	0 7	0 8	0 9	0 13
5	0 6	0 7	0 7	0 8	0 9	0 10	0 11	0 17
6	0 7	0 8	0 9	0 10	0 11	0 12	0 13	0 20
7	0 8	0 9	0 10	0 12	0 13	0 14	0 16	0 24
8	0 9	0 10	0 12	0 13	0 15	0 16	0 18	1 0
9	0 10	0 12	0 13	0 15	0 17	0 19	0 20	1 3
10	0 11	0 13	0 15	0 17	0 19	0 21	0 22	1 7
11	0 12	0 14	0 16	0 19	0 21	0 23	0 25	1 10
12	0 13	0 16	0 18	0 20	0 22	0 25	1 0	1 13
13	0 15	0 17	0 19	0 22	0 24	1 0	1 2	1 17
14	0 16	0 18	0 21	0 24	0 26	1 2	1 4	1 20
15	0 17	0 20	0 22	0 25	1 1	1 4	1 7	1 24
25	1 1	1 6	1 10	1 15	1 20	1 25	2 2	3 3
40	1 18	1 25	2 6	2 13	2 21	3 21	3 9	5 0
55	2 8	2 18	3 1	3 12	3 22	4 5	4 16	6 24
70	2 25	3 11	3 24	4 10	4 23	5 9	5 22	8 20
85	3 15	4 4	4 19	5 8	5 24	6 13	7 2	10 17
100	4 4	4 23	5 15	6 7	6 25	7 17	8 9	12 13
200	8 9	9 19	11 3	12 13	13 24	15 7	16 18	25 0
500	20 22	24 8	27 21	31 7	34 19	38 5	41 18	62 13
1000	41 18	48 16	55 15	62 13	69 12	76 10	83 9	125 0

	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
$\frac{1}{2}$	0 2	0 3	0 3	0 4	0 4	0 5	0 6	0 6
1	0 4	0 6	0 7	0 8	0 9	0 10	0 11	0 12
2	0 9	0 11	0 13	0 16	0 18	0 20	0 22	0 25
3	0 13	0 17	0 20	0 24	1 0	1 3	1 7	1 10
4	0 18	0 22	1 0	1 4	1 9	1 13	1 18	1 22
5	0 22	1 1	1 7	1 12	1 18	1 24	2 2	2 8
6	1 0	1 7	1 13	1 20	2 0	2 7	2 13	2 20
7	1 4	1 12	1 20	2 1	2 9	2 17	2 25	3 6
8	1 9	1 18	2 0	2 9	2 18	3 0	3 9	3 18
9	1 13	1 24	2 7	2 17	3 0	3 10	3 20	4 3
10	1 18	2 2	2 13	2 25	3 9	3 20	4 4	4 16
11	1 22	2 8	2 20	3 6	3 18	4 3	4 16	5 1
12	2 0	2 13	3 0	3 13	4 0	4 13	5 0	5 13
13	2 4	2 19	3 7	3 21	4 9	4 24	5 11	5 26
14	2 9	2 25	3 13	4 2	4 18	5 7	5 22	6 11
15	2 13	3 3	3 20	4 10	5 0	5 17	6 7	6 24
25	4 4	5 6	6 7	7 8	8 9	9 10	10 11	11 12
40	6 18	8 9	10 0	11 18	13 9	15 0	16 18	18 9
55	9 4	11 12	13 20	16 1	18 9	20 17	22 25	25 6
70	11 18	14 16	17 13	20 11	23 9	26 7	29 4	32 2
85	14 4	17 19	21 7	24 21	28 9	31 24	35 11	38 26
100	16 18	20 22	25 0	29 4	33 9	37 13	41 18	45 22
200	33 9	41 18	50 0	58 9	66 18	75 0	83 9	91 18
500	83 9	104 4	125 0	145 22	166 18	187 13	208 9	229 4
1000	166 18	208 9	250 0	291 18	333 9	375 0	416 18	458 9

TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length.	Depth 10 inches.							
	Width 6 inches.	Width 7 inches.	Width. 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
$\frac{1}{2}$	0 1	0 1	0 1	0 1	0 1	0 1	0 1	0 2
1	0 1	0 1	0 2	0 2	0 2	0 2	0 2	0 4
2	0 2	0 3	0 3	0 4	0 4	0 5	0 5	0 7
3	0 4	0 4	0 5	0 6	0 6	0 7	0 7	0 11
4	0 5	0 6	0 7	0 7	0 8	0 9	0 10	0 15
5	0 6	0 7	0 8	0 9	0 10	0 11	0 12	0 19
6	0 7	0 9	0 10	0 11	0 12	0 14	0 15	0 23
7	0 9	0 10	0 12	0 13	0 15	0 16	0 17	0 26
8	0 10	0 12	0 13	0 15	0 17	0 18	0 20	1 3
9	0 11	0 13	0 15	0 17	0 19	0 21	0 22	1 7
10	0 12	0 15	0 17	0 19	0 21	0 23	0 25	1 10
11	0 14	0 16	0 18	0 21	0 23	0 25	1 0	1 14
12	0 15	0 17	0 20	0 22	0 25	1 0	1 3	1 18
13	0 16	0 19	0 22	0 24	1 0	1 3	1 5	1 23
14	0 17	0 20	0 23	0 26	1 2	1 5	1 8	1 25
15	0 19	0 22	0 25	1 1	1 4	1 7	1 10	2 2
25	1 4	1 9	1 15	1 20	1 25	2 3	2 8	3 13
40	1 23	2 4	2 13	2 21	3 2	3 11	3 19	5 15
55	2 15	2 26	3 11	3 23	4 7	4 18	5 2	7 17
70	3 6	3 21	4 9	4 23	5 11	5 25	6 13	9 19
85	3 25	4 16	5 7	5 24	6 15	7 6	7 23	11 29
100	4 17	5 11	6 5	6 25	7 19	8 13	9 7	13 24
200	9 7	10 23	12 9	13 24	15 12	16 26	18 14	27 21
500	23 4	27 0	30 23	34 19	38 16	42 12	46 8	69 12
1000	46 8	54 0	61 20	69 12	77 4	84 24	92 16	138 24

	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
$\frac{1}{2}$	0 2	0 3	0 4	0 4	0 5	0 6	0 6	0 7
1	0 5	0 6	0 7	0 9	0 10	0 11	0 12	0 14
2	0 10	0 12	0 15	0 17	0 20	0 22	0 25	1 0
3	0 15	0 19	0 22	0 26	1 3	1 7	1 10	1 14
4	0 20	0 25	1 3	1 8	1 13	1 18	1 23	2 1
5	0 25	1 4	1 10	1 17	1 23	2 2	2 8	2 15
6	1 3	1 10	1 18	1 25	2 6	2 13	2 21	3 1
7	1 8	1 17	1 25	2 7	2 16	2 25	3 6	3 15
8	1 13	1 23	2 6	2 16	2 26	3 9	3 19	4 2
9	1 18	2 2	2 13	2 25	3 9	3 20	4 4	4 16
10	1 23	2 8	2 21	3 6	3 19	4 4	4 17	5 2
11	2 1	2 15	3 1	3 15	4 2	4 16	5 2	5 15
12	2 6	2 21	3 9	3 24	4 12	5 0	5 15	6 3
13	2 11	3 0	3 16	4 6	4 22	5 11	6 0	6 17
14	2 16	3 6	3 24	4 14	5 5	5 22	6 13	7 3
15	2 21	3 13	4 4	4 23	5 15	6 7	6 25	7 17
25	4 17	5 21	6 25	8 3	9 7	10 11	11 15	12 20
40	7 11	9 7	11 3	12 26	14 22	16 18	18 14	20 10
55	10 5	12 20	15 7	17 22	20 10	22 25	25 12	28 0
70	12 26	16 5	19 12	22 18	25 25	29 4	32 11	35 17
85	15 20	19 18	23 16	27 15	31 13	35 11	39 9	43 8
100	18 14	23 4	27 21	32 11	37 1	41 18	46 8	50 25
200	37 1	46 8	55 15	64 22	74 2	83 9	92 16	101 23
500	92 16	115 20	138 24	162 1	185 5	208 9	231 13	254 17
1000	185 5	231 13	277 21	324 2	370 10	416 18	462 26	509 7

TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length.	Depth 11 inches.							
	Width 6 inches.	Width 7 inches.	Width 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 1	0 1	0 1	0 1	0 1	0 1	0 1	0 2
2	0 1	0 2	0 2	0 2	0 2	0 3	0 3	0 4
3	0 3	0 3	0 4	0 4	0 5	0 5	0 5	0 8
4	0 4	0 5	0 5	0 6	0 7	0 8	0 8	0 12
5	0 5	0 6	0 7	0 8	0 9	0 10	0 11	0 16
6	0 7	0 8	0 9	0 10	0 11	0 13	0 14	0 21
7	0 8	0 10	0 11	0 12	0 14	0 15	0 18	0 25
8	0 10	0 11	0 13	0 14	0 16	0 18	0 19	1 2
9	0 11	0 13	0 15	0 16	0 18	0 20	0 22	1 6
10	0 12	0 14	0 16	0 19	0 21	0 23	0 25	1 10
11	0 14	0 16	0 18	0 21	0 23	0 25	1 0	1 14
12	0 15	0 18	0 20	0 23	0 25	1 1	1 3	1 18
13	0 16	0 19	0 22	0 25	1 0	1 3	1 6	1 22
14	0 18	0 21	0 24	0 26	1 3	1 6	1 9	2 0
15	0 19	0 22	0 26	1 2	1 5	1 8	1 11	2 4
25	0 21	0 24	1 0	1 4	1 7	1 11	1 14	2 8
40	1 7	1 13	1 19	1 25	2 3	2 9	2 15	3 22
55	2 1	2 10	2 19	3 1	3 11	3 20	4 2	6 3
70	2 23	3 7	3 20	4 5	4 18	5 4	5 16	8 11
85	3 15	4 4	4 20	5 9	5 25	6 15	7 3	10 19
100	4 9	5 1	5 21	6 13	7 6	7 25	8 18	13 0
200	5 2	5 25	6 21	7 17	8 13	9 9	10 5	15 7
500	10 5	11 24	13 16	15 7	16 26	18 18	20 10	30 15
1000	25 12	29 19	33 26	38 5	42 12	46 18	50 25	76 10
	50 25	59 11	67 24	76 10	84 24	93 10	101 23	152 21

Yds.	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 3	0 3	0 4	0 5	0 5	0 6	0 7	0 8
2	0 5	0 7	0 8	0 10	0 11	0 12	0 14	0 15
3	0 11	0 14	0 16	0 19	0 22	0 25	1 0	1 3
4	0 16	0 21	0 25	1 2	1 6	1 10	1 14	1 18
5	0 22	1 0	1 6	1 11	1 17	1 22	2 1	2 6
6	1 0	1 7	1 14	1 21	2 1	2 8	2 15	2 22
7	1 6	1 14	1 22	2 4	2 12	2 20	3 1	3 10
8	1 11	1 21	2 4	2 13	2 23	3 6	3 15	3 25
9	1 17	2 1	2 12	2 23	3 7	3 18	4 2	4 13
10	1 22	2 8	2 20	3 6	3 18	4 3	4 16	5 1
11	2 1	2 15	3 1	3 15	4 2	4 16	5 2	5 16
12	2 6	2 22	3 10	3 25	4 13	5 1	5 16	6 4
13	2 12	3 1	3 16	4 7	4 24	5 13	6 3	6 19
14	2 17	3 8	3 26	4 17	5 8	5 26	6 17	7 8
15	2 23	3 15	4 7	5 0	5 19	6 11	7 3	7 23
25	3 1	3 22	4 16	5 9	6 3	6 24	7 17	8 11
40	5 2	6 10	7 17	8 25	10 5	11 12	12 20	14 0
55	8 4	10 5	12 6	14 7	16 8	18 9	20 10	22 11
70	11 5	14 0	16 22	19 16	22 11	25 6	28 0	30 22
85	14 7	17 22	21 10	24 26	28 14	32 2	35 17	39 6
100	17 8	21 17	25 26	30 8	34 17	38 26	43 8	47 17
200	20 10	25 12	30 15	35 17	40 20	45 23	50 25	56 0
500	40 20	50 25	61 3	71 8	81 13	91 18	101 23	112 1
1000	101 23	127 8	152 21	178 6	203 19	229 4	254 17	280 2
	203 19	254 17	305 15	356 13	407 11	458 9	509 7	560 5

TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length.	Depth 1 foot.							
	Width 6 inches.	Width 7 inches.	Width 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
$\frac{1}{4}$	0 1	0 1	0 1	0 1	0 1	0 1	0 1	0 2
1	0 1	0 2	0 2	0 2	0 2	0 3	0 3	0 4
2	0 3	0 3	0 4	0 4	0 5	0 5	0 6	0 9
3	0 4	0 5	0 6	0 7	0 7	0 8	0 9	0 13
4	0 6	0 7	0 8	0 9	0 10	0 11	0 12	0 18
5	0 7	0 9	0 10	0 11	0 12	0 14	0 15	0 22
6	0 9	0 10	0 12	0 13	0 15	0 16	0 18	1 0
7	0 10	0 12	0 14	0 16	0 17	0 19	0 21	1 4
8	0 12	0 14	0 16	0 18	0 20	0 22	0 24	1 9
9	0 13	0 16	0 18	0 20	0 22	0 25	1 0	1 13
10	0 15	0 17	0 20	0 22	0 25	1 0	1 3	1 18
11	0 16	0 19	0 22	0 25	1 0	1 3	1 6	1 22
12	0 18	0 21	0 24	1 0	1 3	1 6	1 9	2 0
13	0 19	0 23	0 26	1 2	1 5	1 9	1 12	2 4
14	0 21	0 24	1 1	1 4	1 8	1 11	1 15	2 9
15	0 22	0 26	1 3	1 7	1 10	1 14	1 18	2 13
25	1 10	1 17	1 23	2 2	2 8	2 15	2 21	4 4
40	2 6	2 16	2 26	3 9	3 19	4 2	4 12	6 18
55	3 1	3 15	4 2	4 16	5 2	5 16	6 3	9 4
70	3 24	4 14	5 5	5 22	6 13	7 3	7 21	11 18
85	4 19	5 14	6 8	7 2	7 23	8 18	9 12	14 4
100	5 15	6 13	7 11	8 9	9 7	10 5	11 3	16 18
200	11 3	12 26	14 22	16 18	18 14	20 10	22 6	33 9
500	27 21	32 11	37 1	41 18	46 8	50 25	55 15	83 9
1000	55 15	64 22	74 2	83 9	93 16	101 23	111 3	166 18

	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
$\frac{1}{4}$	0 3	0 4	0 4	0 5	0 6	0 7	0 7	0 8
1	0 6	0 7	0 9	0 10	0 12	0 13	0 15	0 16
2	0 12	0 15	0 18	0 21	0 24	1 0	1 3	1 6
3	0 18	0 22	1 0	1 4	1 9	1 13	1 18	1 22
4	0 24	1 3	1 9	1 15	1 21	2 0	2 6	2 12
5	1 3	1 10	1 18	1 25	2 6	2 13	2 21	3 1
6	1 9	1 18	2 0	2 9	2 18	3 0	3 9	3 18
7	1 15	1 25	2 9	2 19	3 3	3 13	3 24	4 7
8	1 21	2 6	2 15	3 3	3 15	4 0	4 12	4 24
9	2 0	2 13	3 0	3 13	4 0	4 13	5 0	5 13
10	2 6	2 21	3 9	3 24	4 12	5 0	5 15	6 3
11	2 12	3 1	3 18	4 7	4 24	5 13	6 3	6 19
12	2 18	3 9	4 0	4 18	5 9	6 0	6 18	7 9
13	2 24	3 16	4 9	5 1	5 21	6 13	7 6	7 25
14	3 3	3 24	4 18	5 12	6 6	7 0	7 21	8 15
15	3 9	4 4	5 0	5 22	6 18	7 13	8 9	9 4
25	5 15	6 25	8 9	9 19	11 3	12 13	13 24	15 7
40	8 24	11 3	13 9	15 15	17 21	20 0	23 6	24 12
55	12 6	15 7	18 9	21 10	24 12	27 13	30 15	33 16
70	15 15	19 12	23 9	27 6	31 3	35 0	38 24	42 21
85	18 24	23 16	28 9	33 1	37 21	42 13	47 6	51 25
100	22 6	27 21	33 9	38 24	44 12	50 0	55 15	61 3
200	44 12	55 15	66 18	77 21	88 24	100 0	111 3	122 6
500	111 3	138 24	166 18	194 12	222 6	250 0	277 21	305 15
1000	222 6	277 21	333 9	388 24	444 12	500 0	555 15	611 3

TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

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Length.	Depth 1 foot 2 inches.							
	Width 6 inches.	Width 7 inches.	Width 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 1	0 1	0 1	0 1	0 1	0 2	0 2	0 3
1	0 2	0 2	0 2	0 3	0 3	0 3	0 3	0 5
2	0 3	0 4	0 5	0 5	0 6	0 6	0 7	0 10
3	0 5	0 6	0 7	0 8	0 9	0 10	0 10	0 16
4	0 7	0 8	0 9	0 10	0 12	0 13	0 14	0 21
5	0 9	0 10	0 12	0 13	0 15	0 16	0 17	0 26
6	0 10	0 12	0 14	0 16	0 17	0 19	0 21	1 4
7	0 12	0 14	0 16	0 18	0 20	0 22	0 24	1 10
8	0 14	0 16	0 19	0 21	0 23	0 26	1 1	1 15
9	0 16	0 18	0 21	0 24	0 26	1 2	1 4	1 20
10	0 17	0 20	0 23	0 26	1 2	1 5	1 8	1 25
11	0 19	0 22	0 26	1 2	1 5	1 8	1 11	2 4
12	0 21	0 24	1 1	1 4	1 8	1 11	1 15	2 9
13	0 23	1 0	1 3	1 7	1 11	1 15	1 18	2 14
14	0 24	1 2	1 6	1 10	1 14	1 18	1 22	2 19
15	0 26	1 4	1 8	1 12	1 17	1 21	1 25	2 25
25	1 17	1 24	2 4	2 12	2 19	2 26	3 6	4 23
40	2 16	3 1	3 12	3 24	4 9	4 20	5 5	7 21
55	3 15	4 4	4 20	5 9	5 25	6 14	7 3	10 19
70	4 14	5 8	6 4	6 22	7 15	8 9	9 2	13 16
85	5 14	6 12	7 9	8 7	9 5	10 3	11 0	16 14
100	6 13	7 15	8 17	9 19	10 22	11 24	12 26	19 12
200	12 26	15 3	17 8	19 12	21 16	23 21	25 25	38 24
500	32 11	37 22	43 6	48 16	54 0	59 11	64 22	97 6
1000	64 22	75 17	86 11	97 6	108 1	118 22	129 17	194 12

Yds.	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 10
1	0 7	0 9	0 10	0 12	0 14	0 16	0 17	0 19
2	0 14	0 17	0 21	0 24	1 1	1 4	1 8	1 11
3	0 21	0 26	1 4	1 10	1 15	1 20	1 25	2 4
4	1 1	1 8	1 15	1 22	2 2	2 9	2 16	2 23
5	1 8	1 17	1 25	2 7	2 16	2 25	3 6	3 15
6	1 15	1 25	2 9	2 19	3 3	3 13	3 24	4 7
7	1 22	2 7	2 19	3 5	3 17	4 2	4 14	4 27
8	2 2	2 16	3 3	3 17	4 4	4 18	5 5	5 19
9	2 9	2 25	3 13	4 2	4 18	5 7	5 22	6 11
10	2 16	3 6	3 24	4 14	5 5	5 22	6 13	7 3
11	2 23	3 15	4 7	5 0	5 19	6 11	7 3	7 23
12	3 3	3 24	4 18	5 12	6 6	7 0	7 21	8 15
13	3 10	4 6	5 1	5 24	6 20	7 16	8 11	9 7
14	3 17	4 14	5 12	6 9	7 7	8 4	9 2	9 26
15	3 24	4 23	5 22	6 22	7 21	8 20	9 19	10 19
25	6 13	8 3	9 19	11 9	12 26	14 16	16 5	17 23
40	10 10	12 26	15 15	18 4	20 20	23 9	25 25	28 14
55	14 7	17 22	21 10	24 26	28 14	32 2	35 17	39 6
70	18 4	22 18	27 6	31 20	36 8	40 22	45 10	49 24
85	22 1	27 15	33 1	38 15	44 2	49 16	55 2	60 16
100	25 25	32 11	38 24	45 10	51 23	58 9	64 22	71 8
200	51 23	64 22	77 21	90 20	103 19	116 18	129 17	142 16
500	129 17	162 1	194 12	226 23	259 7	291 18	324 2	356 13
1000	259 7	324 2	388 24	453 19	518 14	583 9	648 4	712 26

TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length.	Depth 1 foot 4 inches.							
	Width 6 inches.	Width 7 inches.	Width. 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 1	0 1	0 1	0 1	0 2	0 2	0 2	0 3
2	0 2	0 2	0 3	0 3	0 3	0 4	0 4	0 6
3	0 4	0 5	0 5	0 6	0 7	0 7	0 8	0 12
4	0 6	0 7	0 8	0 9	0 10	0 11	0 12	0 18
5	0 8	0 9	0 11	0 12	0 13	0 15	0 16	0 24
6	0 10	0 12	0 13	0 15	0 17	0 18	0 20	1 3
7	0 12	0 14	0 16	0 18	0 20	0 22	0 24	1 9
8	0 14	0 16	0 19	0 21	0 23	0 26	1 1	1 15
9	0 16	0 19	0 21	0 24	1 0	1 2	1 5	1 21
10	0 18	0 21	0 24	1 0	1 3	1 6	1 9	2 0
11	0 20	0 23	1 0	1 3	1 6	1 10	1 13	2 6
12	0 22	0 26	1 2	1 6	1 10	1 13	1 17	2 12
13	0 24	1 1	1 5	1 9	1 13	1 17	1 21	2 18
14	0 26	1 3	1 8	1 12	1 16	1 21	1 25	2 24
15	1 1	1 6	1 10	1 15	1 20	1 24	2 2	3 3
25	1 3	1 8	1 13	1 18	1 23	2 1	2 6	3 9
40	1 23	2 4	2 13	2 21	3 2	3 11	3 19	5 15
55	2 26	3 12	3 26	4 12	4 25	5 12	5 25	8 24
70	4 2	4 20	5 12	6 3	6 21	7 13	8 4	12 6
85	5 5	6 1	6 25	7 21	8 17	9 14	10 10	15 15
100	6 8	7 9	8 11	9 12	10 13	11 15	12 16	18 24
200	7 11	8 17	9 24	11 3	12 9	13 16	14 22	22 6
500	14 22	17 8	19 20	22 6	24 19	27 4	29 17	44 12
1000	37 1	43 6	49 10	55 15	61 20	67 24	74 2	111 3
	74 2	86 11	98 21	111 3	123 12	135 22	148 4	222 6

	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 4	0 5	0 6	0 7	0 8	0 9	0 10	0 11
2	0 8	0 10	0 12	0 14	0 16	0 18	0 20	0 22
3	0 16	0 20	0 24	1 1	1 5	1 9	1 13	1 17
4	0 24	1 3	1 9	1 15	1 21	2 0	2 6	2 12
5	1 5	1 13	1 21	2 2	2 10	2 18	2 26	3 7
6	1 13	1 23	2 6	2 16	2 26	3 9	3 19	4 2
7	1 21	2 6	2 18	3 3	3 15	4 0	4 12	4 24
8	2 2	2 16	3 3	3 17	4 4	4 18	5 5	5 19
9	2 10	2 26	3 15	4 4	4 20	5 9	5 25	6 14
10	2 18	3 9	4 0	4 18	5 9	6 0	6 18	7 9
11	2 26	3 19	4 12	5 5	5 25	6 18	7 11	8 4
12	3 7	4 2	4 24	5 19	6 14	7 9	8 4	8 26
13	3 15	4 12	5 9	6 6	7 3	8 0	8 24	9 21
14	3 23	4 22	5 21	6 20	7 19	8 18	9 17	10 16
15	4 4	5 5	6 6	7 7	8 8	9 9	10 10	11 11
25	4 12	5 15	6 18	7 21	8 24	10 0	11 3	12 6
40	7 11	9 7	11 3	12 26	14 22	16 18	18 14	20 10
55	11 23	14 22	17 21	20 20	23 19	26 18	29 17	32 16
70	16 8	20 10	24 12	28 14	32 16	36 18	40 20	44 22
85	20 20	25 25	31 3	36 8	41 13	46 18	51 23	57 1
100	25 5	31 13	37 21	44 2	50 10	56 18	62 26	69 7
200	29 17	37 1	44 12	51 23	59 7	66 18	74 2	81 13
500	59 7	74 2	88 24	103 19	118 14	133 9	148 4	162 26
1000	148 4	185 5	222 6	259 7	296 8	333 9	370 10	407 11
	296 8	370 10	444 12	518 14	592 16	666 18	740 20	814 23

TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length.	Depth 1 foot 6 inches.							
	Width 6 inches.	Width 7 inches.	Width 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 1	0 1	0 1	0 2	0 2	0 2	0 2	0 3
2	0 2	0 3	0 3	0 3	0 4	0 4	0 4	0 7
3	0 4	0 5	0 6	0 7	0 7	0 8	0 9	0 13
4	0 7	0 8	0 9	0 10	0 11	0 12	0 13	0 20
5	0 9	0 10	0 12	0 13	0 15	0 16	0 18	1 0
6	0 11	0 13	0 15	0 17	0 19	0 21	0 22	1 7
7	0 13	0 16	0 18	0 20	0 22	0 25	1 0	1 13
8	0 16	0 18	0 21	0 24	0 26	1 2	1 4	1 20
9	0 18	0 21	0 24	1 0	1 3	1 6	1 9	2 0
10	0 20	0 24	1 0	1 3	1 7	1 10	1 13	2 7
11	0 22	0 26	1 3	1 7	1 10	1 14	1 18	2 13
12	0 25	1 2	1 6	1 10	1 14	1 18	1 22	2 20
13	1 0	1 4	1 9	1 13	1 18	1 22	2 0	3 0
14	1 2	1 7	1 12	1 17	1 22	2 0	2 4	3 7
15	1 4	1 10	1 15	1 20	1 25	2 4	2 9	3 13
20	1 7	1 12	1 18	1 24	2 2	2 8	2 13	3 20
25	2 2	2 12	2 21	3 3	3 13	3 22	4 4	6 7
40	3 9	3 24	4 12	5 0	5 15	6 3	6 18	10 0
55	4 16	5 9	6 3	6 24	7 17	8 11	9 4	13 20
70	5 22	6 22	7 21	8 20	9 19	10 19	11 18	17 13
85	7 2	8 7	9 12	10 17	11 22	13 0	14 4	21 7
100	8 9	9 19	11 3	12 13	13 24	15 7	16 18	25 0
200	16 18	19 12	22 6	25 0	27 21	30 15	33 9	50 0
500	41 18	48 16	55 15	63 13	69 13	76 10	83 9	125 0
1000	53 9	97 6	111 3	125 0	138 24	152 21	166 18	250 0

Yds.	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 4	0 6	0 7	0 8	0 9	0 10	0 11	0 12
2	0 9	0 11	0 13	0 16	0 18	0 20	0 22	0 25
3	0 18	0 22	1 0	1 4	1 9	1 13	1 18	1 22
4	1 0	1 7	1 13	1 20	2 0	2 7	2 13	2 20
5	1 9	1 18	2 0	2 9	2 18	3 0	3 9	3 18
6	1 18	2 2	2 13	2 25	3 9	3 20	4 4	4 16
7	2 0	2 13	3 0	3 13	4 0	4 13	5 0	5 13
8	2 9	2 25	3 13	4 2	4 18	5 7	5 22	6 11
9	2 18	3 9	4 0	4 18	5 9	6 0	6 18	7 9
10	3 0	3 20	4 13	5 7	6 0	6 20	7 13	8 7
11	3 9	4 4	5 0	5 22	6 18	7 13	8 9	9 4
12	3 18	4 16	5 13	6 11	7 9	8 7	9 4	10 2
13	4 0	5 0	6 0	7 0	8 0	9 0	10 0	11 0
14	4 9	5 11	6 13	7 16	8 18	9 20	10 22	11 25
15	4 18	5 22	7 0	8 4	9 9	10 13	11 18	12 22
20	5 0	6 7	7 13	8 20	10 0	11 7	12 13	13 20
25	8 9	10 11	12 13	14 16	16 18	18 20	20 22	22 25
40	13 9	16 18	20 0	23 9	26 18	30 0	33 9	36 18
55	18 9	22 25	27 13	32 2	36 18	41 7	45 22	50 11
70	23 9	29 4	35 0	40 22	46 18	52 13	58 9	64 4
85	28 9	35 11	42 13	49 16	56 18	63 20	70 22	77 25
100	33 9	41 18	50 0	58 9	66 18	75 0	83 9	91 18
200	66 18	83 9	100 0	116 18	133 9	150 0	166 18	183 9
500	166 18	208 9	250 0	291 18	333 9	375 0	416 18	458 9
1000	333 9	416 18	500 0	583 9	666 18	750 0	833 9	916 18



TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length.	Depth 1 foot 9 inches.							
	Width 6 inches.	Width 7 inches.	Width 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 1	0 2	0 2	0 2	0 2	0 2	0 3	0 4
2	0 3	0 3	0 3	0 4	0 4	0 5	0 5	0 8
3	0 5	0 6	0 7	0 8	0 9	0 10	0 10	0 16
4	0 8	0 9	0 10	0 12	0 13	0 14	0 16	0 24
5	0 10	0 12	0 14	0 16	0 17	0 19	0 21	1 4
6	0 13	0 15	0 17	0 20	0 22	0 24	0 26	1 12
7	0 16	0 18	0 21	0 24	0 26	1 2	1 4	1 20
8	0 18	0 21	0 24	1 1	1 4	1 7	1 10	2 1
9	0 21	0 24	1 1	1 4	1 8	1 11	1 15	2 9
10	0 24	1 1	1 4	1 8	1 12	1 16	1 20	2 17
11	0 26	1 4	1 8	1 12	1 17	1 21	1 25	2 25
12	1 1	1 7	1 11	1 16	1 21	1 26	2 4	3 6
13	1 4	1 10	1 15	1 20	1 25	2 4	2 9	3 13
14	1 7	1 13	1 18	1 24	2 3	2 9	2 14	3 21
15	1 10	1 16	1 22	2 1	2 7	2 13	2 19	4 2
20	1 12	1 19	1 25	2 5	2 12	2 18	2 25	4 10
25	2 12	2 23	3 6	3 17	4 1	4 12	4 23	7 8
30	3 24	4 14	5 5	5 22	6 13	7 3	7 21	11 19
35	5 9	6 6	7 3	8 1	8 25	9 22	10 19	16 1
40	6 22	7 25	9 2	10 6	11 9	12 13	13 16	20 11
45	8 7	9 17	11 0	13 11	13 21	15 4	16 14	24 21
50	9 19	11 9	12 26	14 16	16 5	17 22	19 12	29 4
60	19 12	22 18	25 25	29 4	32 11	35 17	38 24	58 9
70	48 16	56 19	64 22	72 25	81 0	89 3	97 6	145 23
80	97 6	113 11	129 17	145 22	162 1	178 6	194 12	291 18

	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 5	0 7	0 8	0 9	0 10	0 12	0 13	0 14
2	0 10	0 13	0 16	0 18	0 21	0 24	0 26	1 2
3	0 21	0 26	1 4	1 10	1 15	1 20	1 25	2 4
4	1 4	1 12	1 20	2 1	2 9	2 17	2 25	3 6
5	1 15	1 25	2 9	2 19	3 3	3 13	3 24	4 7
6	1 25	2 12	2 25	3 11	3 24	4 10	4 23	5 9
7	2 9	2 25	3 13	4 2	4 18	5 7	5 22	6 11
8	2 19	3 11	4 2	4 21	5 12	6 3	6 22	7 13
9	3 3	3 24	4 18	5 12	6 6	7 0	7 21	8 15
10	3 13	4 10	5 7	6 3	7 0	7 24	8 20	9 17
11	3 24	4 23	5 22	6 22	7 21	8 20	9 19	10 19
12	4 7	5 9	6 11	7 13	8 15	9 17	10 19	11 21
13	4 18	5 22	7 0	8 4	9 9	10 13	11 18	12 23
14	5 1	6 9	7 16	8 23	10 3	11 10	12 17	13 24
15	5 12	6 23	8 4	9 14	10 24	12 7	13 16	14 26
16	5 22	7 8	8 20	10 6	11 18	13 3	14 16	16 1
20	9 19	12 4	14 16	17 0	19 12	21 24	24 8	26 20
25	15 15	19 12	23 9	27 6	31 3	35 0	38 24	43 21
30	21 10	26 20	32 2	37 12	42 21	48 3	53 13	58 22
35	27 6	34 1	40 22	47 17	54 12	61 7	68 1	74 23
40	33 1	41 9	49 16	57 23	66 3	74 10	82 17	90 24
50	38 24	48 16	58 9	68 1	77 21	87 13	97 6	106 25
60	77 21	97 6	116 18	136 3	155 15	175 0	194 12	213 24
70	194 12	243 1	291 18	340 7	388 24	437 13	486 3	534 19
80	358 24	466 3	563 9	660 15	777 21	875 0	972 6	1069 12

TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length.	Depth 2 feet.							
	Width 6 inches.	Width 7 inches.	Width 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
$\frac{1}{2}$	0 1	0 2	0 2	0 2	0 2	0 3	0 3	0 4
1	0 3	0 3	0 4	0 4	0 5	0 5	0 6	0 9
2	0 6	0 7	0 8	0 9	0 10	0 11	0 12	0 18
3	0 9	0 10	0 12	0 13	0 15	0 16	0 18	1 0
4	0 12	0 14	0 16	0 18	0 20	0 22	0 24	1 9
5	0 15	0 17	0 20	0 22	0 25	1 0	1 3	1 18
6	0 18	0 21	0 24	1 0	1 3	1 6	1 9	2 0
7	0 21	0 24	1 1	1 4	1 8	1 11	1 15	2 9
8	0 24	1 1	1 5	1 9	1 13	1 17	1 21	2 18
9	1 0	1 4	1 9	1 13	1 18	1 22	2 0	3 0
10	1 3	1 8	1 13	1 18	1 23	2 1	2 6	3 9
11	1 6	1 11	1 17	1 22	2 1	2 6	2 12	3 18
12	1 9	1 15	1 21	2 0	2 6	2 12	2 18	4 0
13	1 12	1 18	1 25	2 4	2 11	2 17	2 24	4 9
14	1 15	1 23	2 2	2 9	2 16	2 23	3 3	4 18
15	1 18	1 25	2 6	2 13	2 21	3 1	3 9	5 0
25	2 21	3 6	3 19	4 4	4 17	5 2	5 15	8 9
40	4 12	5 5	5 25	6 18	7 11	8 4	8 24	13 9
55	6 3	7 3	8 4	9 4	10 5	11 5	12 6	18 9
70	7 21	9 2	10 10	11 18	12 26	14 7	15 15	23 9
85	9 12	11 0	12 16	14 4	15 20	17 8	18 24	28 9
100	11 3	12 26	14 22	16 18	18 14	20 10	22 6	33 9
200	22 6	25 25	29 17	33 9	37 1	40 20	44 12	66 18
600	55 15	64 22	74 2	83 9	92 16	101 23	111 3	166 18
1000	111 3	129 17	148 4	166 18	185 5	203 19	222 6	333 9

Yds.	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
$\frac{1}{2}$	0 6	0 7	0 9	0 10	0 12	0 13	0 15	0 16
1	0 12	0 15	0 18	0 21	0 24	1 0	1 3	1 6
2	0 24	1 3	1 9	1 15	1 21	2 0	2 6	2 12
3	1 9	1 18	2 0	2 9	2 18	3 0	3 9	3 18
4	1 21	2 6	2 18	3 3	3 15	4 0	4 12	4 24
5	2 6	2 21	3 9	3 24	4 12	5 0	5 15	6 3
6	2 18	3 9	4 0	4 18	5 9	6 0	6 18	7 9
7	3 3	3 24	4 18	5 12	6 6	7 0	7 21	8 15
8	3 15	4 12	5 9	6 6	7 3	8 0	8 24	9 21
9	4 0	5 0	6 0	7 0	8 0	9 0	10 0	11 0
10	4 12	5 15	6 18	7 21	8 24	10 0	11 3	12 6
11	4 24	6 3	7 9	8 15	9 21	11 0	12 6	13 12
12	5 9	6 18	8 0	9 9	10 18	12 0	13 9	14 18
13	5 21	7 6	8 18	10 3	11 15	13 0	14 12	15 24
14	6 6	7 21	9 9	10 24	12 12	14 0	15 15	17 3
15	6 18	8 9	10 0	11 18	13 9	15 0	16 18	18 9
25	11 3	13 24	16 18	19 12	22 6	25 0	27 21	30 15
40	17 21	22 6	26 18	31 3	35 15	40 0	44 12	48 24
55	24 12	30 15	36 18	42 21	48 24	55 0	61 3	67 6
70	31 3	38 24	46 18	54 12	62 6	70 0	77 21	85 15
85	37 21	47 6	56 18	66 3	75 15	85 0	94 12	103 24
100	44 12	55 15	66 18	77 21	88 24	100 0	111 3	122 6
200	88 24	111 3	133 9	155 15	177 21	200 0	223 6	244 12
500	222 6	277 21	333 9	388 24	444 12	500 0	555 15	611 3
1000	444 12	555 15	666 18	777 21	888 24	1000 0	1111 3	1222 6

TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length.	Depth 2 feet 3 inches.							
	Width 6 inches.	Width 7 inches.	Width 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 2	0 2	0 2	0 3	0 3	0 3	0 3	0 6
2	0 3	0 4	0 4	0 5	0 6	0 6	0 7	0 10
3	0 7	0 8	0 9	0 10	0 11	0 12	0 13	0 20
4	0 10	0 12	0 13	0 15	0 17	0 19	0 20	1 3
5	0 13	0 16	0 18	0 20	0 22	0 25	1 0	1 13
6	0 17	0 20	0 22	0 25	1 1	1 4	1 7	1 24
7	0 20	0 24	1 0	1 3	1 7	1 10	1 13	2 7
8	0 24	1 1	1 4	1 8	1 12	1 16	1 20	2 17
9	1 0	1 4	1 9	1 13	1 18	1 22	2 0	3 0
10	1 3	1 8	1 13	1 19	1 24	2 2	2 7	3 10
11	1 7	1 12	1 18	1 24	2 2	2 8	2 13	3 20
12	1 10	1 16	1 22	2 2	2 8	2 14	2 20	4 3
13	1 13	1 20	2 0	2 7	2 13	2 20	3 0	4 13
14	1 17	1 24	2 4	2 12	2 19	2 26	3 7	4 24
15	1 20	2 1	2 9	2 17	2 25	3 6	3 13	5 7
25	1 24	2 5	2 13	2 22	3 3	3 12	3 20	6 17
40	3 3	3 17	4 4	4 19	5 6	5 20	6 7	9 10
55	5 0	5 22	6 18	7 15	8 9	9 4	10 0	15 0
70	6 24	8 1	9 4	10 8	11 12	12 16	13 20	20 17
85	8 20	10 6	11 18	13 3	14 16	16 1	17 13	26 7
100	10 17	12 11	14 4	15 25	17 19	19 13	21 7	31 24
125	12 13	14 16	16 18	18 20	20 22	22 25	25 0	37 13
150	14 13	16 18	18 20	20 22	22 25	25 0	27 0	40 13
175	16 13	18 18	20 22	22 25	25 0	27 0	29 0	43 13
200	18 13	20 18	22 22	24 25	26 0	28 0	30 0	46 13
225	20 13	22 18	24 22	26 25	28 0	30 0	32 0	49 13
250	22 13	24 18	26 22	28 25	30 0	32 0	34 0	52 13
275	24 13	26 18	28 22	30 25	32 0	34 0	36 0	55 13
300	26 13	28 18	30 22	32 25	34 0	36 0	38 0	58 13
325	28 13	30 18	32 22	34 25	36 0	38 0	40 0	61 13
350	30 13	32 18	34 22	36 25	38 0	40 0	42 0	64 13
375	32 13	34 18	36 22	38 25	40 0	42 0	44 0	67 13
400	34 13	36 18	38 22	40 25	42 0	44 0	46 0	70 13
425	36 13	38 18	40 22	42 25	44 0	46 0	48 0	73 13
450	38 13	40 18	42 22	44 25	46 0	48 0	50 0	76 13
475	40 13	42 18	44 22	46 25	48 0	50 0	52 0	79 13
500	42 13	44 18	46 22	48 25	50 0	52 0	54 0	82 13
525	44 13	46 18	48 22	50 25	52 0	54 0	56 0	85 13
550	46 13	48 18	50 22	52 25	54 0	56 0	58 0	88 13
575	48 13	50 18	52 22	54 25	56 0	58 0	60 0	91 13
600	50 13	52 18	54 22	56 25	58 0	60 0	62 0	94 13
625	52 13	54 18	56 22	58 25	60 0	62 0	64 0	97 13
650	54 13	56 18	58 22	60 25	62 0	64 0	66 0	100 13
675	56 13	58 18	60 22	62 25	64 0	66 0	68 0	103 13
700	58 13	60 18	62 22	64 25	66 0	68 0	70 0	106 13
725	60 13	62 18	64 22	66 25	68 0	70 0	72 0	109 13
750	62 13	64 18	66 22	68 25	70 0	72 0	74 0	112 13
775	64 13	66 18	68 22	70 25	72 0	74 0	76 0	115 13
800	66 13	68 18	70 22	72 25	74 0	76 0	78 0	118 13
825	68 13	70 18	72 22	74 25	76 0	78 0	80 0	121 13
850	70 13	72 18	74 22	76 25	78 0	80 0	82 0	124 13
875	72 13	74 18	76 22	78 25	80 0	82 0	84 0	127 13
900	74 13	76 18	78 22	80 25	82 0	84 0	86 0	130 13
925	76 13	78 18	80 22	82 25	84 0	86 0	88 0	133 13
950	78 13	80 18	82 22	84 25	86 0	88 0	90 0	136 13
975	80 13	82 18	84 22	86 25	88 0	90 0	92 0	139 13
1000	82 13	84 18	86 22	88 25	90 0	92 0	94 0	142 13

TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length.	Depth 2 feet 6 inches.							
	Width 6 inches.	Width 7 inches.	Width 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 2	0 2	0 2	0 3	0 3	0 3	0 4	0 6
2	0 4	0 4	0 5	0 6	0 6	0 7	0 7	0 11
3	0 7	0 9	0 10	0 11	0 12	0 14	0 15	0 23
4	0 11	0 13	0 15	0 17	0 19	0 21	0 22	1 7
5	0 15	0 17	0 20	0 22	0 25	1 0	1 3	1 18
6	0 19	0 23	0 25	1 1	1 4	1 7	1 10	2 2
7	0 22	0 26	1 3	1 7	1 10	1 14	1 18	2 13
8	0 26	1 4	1 8	1 12	1 17	1 21	1 25	2 25
9	1 3	1 8	1 13	1 18	1 23	2 1	2 6	3 9
10	1 7	1 12	1 18	1 24	2 2	2 8	2 13	3 20
11	1 10	1 17	1 23	2 2	2 8	2 15	2 21	4 4
12	1 14	1 21	2 1	2 8	2 15	2 22	3 1	4 16
13	1 18	1 25	2 6	2 13	2 21	3 1	3 9	5 0
14	1 22	2 3	2 11	2 19	3 0	3 8	3 16	5 11
15	1 25	2 7	2 16	2 25	3 6	3 15	3 24	5 22
25	2 2	2 12	2 21	3 3	3 13	3 22	4 4	6 7
40	3 13	4 1	4 17	5 6	5 21	6 10	6 25	10 11
55	5 15	6 13	7 11	8 9	9 7	10 5	11 3	16 18
70	7 17	8 25	10 5	11 12	12 20	14 0	15 7	22 25
85	9 19	11 9	13 26	14 16	16 5	17 22	19 12	29 4
100	11 22	13 21	15 20	17 19	19 18	21 17	23 16	35 11
200	23 24	26 5	28 14	30 22	33 4	35 12	37 21	41 18
500	59 12	68 0	73 16	79 4	85 8	90 25	95 15	83 9
1000	138 24	163 1	185 5	208 9	231 13	254 17	277 21	416 18

	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 7	0 9	0 11	0 13	0 15	0 17	0 19	0 21
2	0 15	0 19	0 22	0 26	1 3	1 7	1 10	1 14
3	1 3	1 10	1 18	1 25	2 6	2 13	2 21	3 1
4	1 18	2 2	2 13	2 25	3 9	3 20	4 4	4 16
5	2 6	2 21	3 9	3 24	4 12	5 0	5 15	6 3
6	2 21	3 13	4 4	4 23	5 15	6 7	6 25	7 17
7	3 9	4 4	5 0	5 22	6 18	7 13	8 9	9 4
8	3 24	4 23	5 22	6 22	7 21	8 20	9 19	10 19
9	4 12	5 15	6 18	7 21	8 24	10 0	11 3	12 6
10	5 0	6 7	7 13	8 20	10 0	11 7	12 13	13 20
11	5 15	6 25	8 9	9 19	11 3	12 13	13 24	15 7
12	6 3	7 17	9 4	10 19	12 6	13 20	15 7	16 22
13	6 18	8 9	10 0	11 18	13 9	15 0	16 18	18 9
14	7 6	9 1	10 22	12 17	14 12	16 7	18 1	19 23
15	8 21	9 19	11 18	13 16	15 15	17 13	19 12	21 10
25	13 24	17 10	20 22	24 8	27 21	31 7	34 19	38 5
40	23 6	27 21	33 9	38 24	44 12	50 0	55 15	61 3
55	30 15	38 5	45 22	53 13	61 3	68 20	76 10	84 1
70	38 24	48 16	58 9	68 1	77 21	87 13	97 6	106 25
85	47 6	59 1	70 22	82 17	94 12	106 7	118 1	129 23
100	55 15	69 12	83 9	97 6	111 3	125 0	138 24	152 21
200	111 3	138 24	166 18	194 12	222 6	250 0	277 21	305 15
500	277 21	347 6	416 18	486 3	555 15	625 0	694 12	763 24
1000	555 15	694 12	833 9	972 6	1111 3	1250 0	1388 24	1527 21

Length.	Depth 2 feet 9 inches.							
	Width 6 inches.	Width 7 inches.	Width 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 2	0 2	0 3	0 3	0 3	0 4	0 4	0 6
2	0 4	0 5	0 5	0 6	0 7	0 8	0 8	0 12
3	0 8	0 10	0 11	0 12	0 14	0 15	0 16	0 25
4	0 12	0 14	0 16	0 19	0 21	0 23	0 25	1 10
5	0 16	0 19	0 22	0 25	1 0	1 3	1 6	1 22
6	0 21	0 24	1 0	1 4	1 7	1 11	1 14	2 8
7	0 25	1 2	1 6	1 10	1 14	1 18	1 22	2 20
8	1 2	1 7	1 11	1 16	1 21	1 26	2 4	3 6
9	1 6	1 11	1 17	1 22	2 1	2 6	2 12	3 18
10	1 10	1 16	1 22	2 2	2 8	2 14	2 20	4 3
11	1 14	1 21	2 1	2 8	2 15	2 22	3 1	4 16
12	1 18	1 26	2 6	2 14	2 22	3 2	3 10	5 1
13	1 22	2 4	2 12	2 20	3 1	3 10	3 18	5 13
14	2 0	2 9	2 17	2 26	3 8	3 17	3 26	5 26
15	2 4	2 13	2 23	3 6	3 15	3 25	4 7	6 11
16	2 8	2 18	3 1	3 12	3 22	4 5	4 16	6 24
25	3 22	4 12	5 2	5 20	6 10	7 0	7 17	11 12
40	6 3	7 3	8 4	9 4	10 5	11 5	12 6	18 9
55	8 11	9 22	11 5	12 16	14 0	15 11	16 22	25 6
70	10 19	12 13	14 7	16 1	17 22	19 16	21 10	32 2
85	13 0	15 4	17 8	19 13	21 17	23 22	25 26	38 26
100	15 7	17 22	20 10	22 25	25 12	28 0	30 15	45 22
200	30 15	35 17	40 20	45 22	50 25	56 0	61 3	91 18
500	76 10	89 3	101 23	114 16	127 8	140 1	152 21	229 4
1000	152 21	178 6	203 19	229 4	254 17	280 2	305 15	458 9

Yds.	Width 2 feet.		Width 2 ft. 6 in.		Width 3 feet.		Width 3 ft. 6 in.		Width 4 feet.		Width 4 ft. 6 in.		Width 5 feet.		Width 5 ft. 6 in.	
	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 8	0 10	0 12	0 14	0 16	0 19	0 21	0 23	0 25	0 28	0 31	0 34	0 37	0 40	0 43	0 46
2	0 16	0 21	0 25	1 2	1 6	1 10	1 14	1 18	2 0	2 4	2 8	3 1	3 5	3 9	3 13	3 17
3	1 6	1 14	1 22	2 4	2 12	2 20	2 28	3 6	3 14	3 22	3 30	4 3	4 11	4 19	4 27	4 35
4	1 12	2 8	2 20	3 6	3 18	4 7	4 24	5 13	5 22	6 11	6 20	7 9	7 18	8 7	8 16	9 5
5	1 18	2 14	2 30	4 2	4 14	5 4	5 24	6 13	6 22	7 11	7 20	8 9	8 18	9 7	9 16	10 5
6	1 24	2 20	2 36	5 0	5 12	6 2	6 24	7 13	7 22	8 11	8 20	9 9	9 18	10 7	10 16	11 5
7	1 30	2 26	2 42	5 6	5 18	6 8	6 30	7 19	7 28	8 17	8 26	9 15	9 24	10 13	10 22	11 11
8	1 36	2 32	2 48	5 12	5 24	6 12	6 36	7 25	7 34	8 23	8 32	9 21	9 30	10 19	10 28	11 17
9	1 42	2 38	2 54	5 18	5 30	6 18	6 42	7 31	7 40	8 29	8 38	9 27	9 36	10 25	10 34	11 23
10	1 48	2 44	3 0	5 24	5 36	6 24	6 48	7 37	7 46	8 35	8 44	9 33	9 42	10 31	10 40	11 29
11	1 54	2 50	3 6	5 30	5 42	6 30	6 54	7 43	7 52	8 41	8 50	9 39	9 48	10 37	10 46	11 35
12	2 0	2 56	3 12	5 36	5 48	6 36	7 0	7 49	7 58	8 47	8 56	9 45	9 54	10 43	10 52	11 41
13	2 6	3 0	3 18	5 42	5 54	6 42	7 6	7 55	8 4	8 53	9 2	9 51	10 0	10 49	10 58	11 47
14	2 12	3 6	3 24	5 48	6 0	6 48	7 12	8 1	8 10	8 59	9 8	9 57	10 6	10 55	11 4	11 53
15	2 18	3 12	3 30	5 54	6 6	6 54	7 18	8 7	8 16	9 5	9 14	10 3	10 12	11 1	11 50	11 59
25	3 22	4 12	5 2	6 10	7 0	7 50	8 40	9 29	10 18	11 7	11 26	12 15	13 4	13 33	14 22	15 11
40	6 3	7 3	8 4	9 4	10 5	11 5	12 6	13 5	14 6	15 6	16 7	17 7	18 7	19 7	20 7	21 8
55	8 11	9 22	11 5	12 16	14 0	15 11	16 22	17 33	18 44	19 55	21 6	22 17	23 28	24 39	25 50	26 61
70	10 19	12 13	14 7	16 1	17 22	19 16	21 10	23 2	25 13	27 27	29 41	31 55	34 9	36 23	38 37	40 51
85	13 0	15 4	17 8	19 13	21 17	23 22	25 26	27 30	29 34	31 38	33 42	35 46	37 50	39 54	41 58	43 62
100	15 7	17 22	20 10	22 25	25 12	28 0	30 15	32 30	34 45	36 60	38 75	40 90	42 105	44 120	46 135	48 150
200	30 15	35 17	40 20	45 22	50 25	56 0	61 3	66 6	71 9	76 12	81 15	86 18	91 21	96 24	101 27	106 30
500	76 10	89 3	101 23	114 16	127 8	140 1	152 21	164 42	176 63	188 84	200 105	212 126	224 147	236 168	248 189	260 210
1000	152 21	178 6	203 19	229 4	254 17	280 2	305 15	330 30	355 45	380 60	405 75	430 90	455 105	480 120	505 135	530 150

TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length.	Depth 3 feet.							
	Width 6 inches.	Width 7 inches.	Width. 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 2	0 3	0 3	0 3	0 4	0 4	0 4	0 7
2	0 4	0 5	0 6	0 7	0 7	0 8	0 9	0 13
3	0 9	0 10	0 12	0 13	0 15	0 16	0 18	1 0
4	0 13	0 16	0 18	0 20	0 22	0 25	1 0	1 13
5	0 18	0 21	0 24	1 0	1 3	1 6	1 9	2 0
6	0 23	0 28	1 3	1 7	1 10	1 14	1 18	2 13
7	1 0	1 4	1 9	1 13	1 18	1 22	2 0	3 0
8	1 4	1 10	1 15	1 20	1 25	2 4	2 9	3 13
9	1 9	1 15	1 21	2 0	2 6	2 12	2 18	4 0
10	1 13	1 20	2 0	2 7	2 13	2 20	3 0	4 13
11	1 18	1 25	2 6	2 13	2 21	3 1	3 9	5 0
12	1 23	2 4	2 12	2 20	3 1	3 10	3 18	5 13
13	2 0	2 9	2 18	3 0	3 9	3 18	4 0	6 0
14	2 4	2 14	2 24	3 7	3 16	3 26	4 9	6 13
15	2 9	2 19	3 3	3 13	3 24	4 7	4 18	7 0
25	2 13	2 25	3 9	3 20	4 4	4 16	5 0	7 13
40	4 4	4 23	5 15	6 7	6 25	7 17	8 9	12 13
55	6 18	7 21	8 24	10 0	11 3	12 6	13 9	20 0
70	9 4	10 19	12 6	13 20	15 7	16 22	18 9	27 13
85	11 18	13 16	15 15	17 13	19 12	21 10	23 9	35 0
100	14 4	16 14	18 24	21 7	23 16	25 26	28 9	42 13
200	26 18	28 12	32 6	35 0	39 15	43 3	48 9	75 0
300	33 9	38 24	41 12	50 0	55 15	61 3	66 18	100 0
500	83 9	97 6	111 3	125 0	133 24	152 21	166 18	250 0
1000	166 18	194 12	223 6	250 0	277 21	305 15	333 9	500 0

	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 9	0 11	0 13	0 16	0 18	0 20	0 22	0 25
2	0 18	0 23	1 0	1 4	1 9	1 13	1 18	1 23
3	1 9	1 18	2 0	2 9	2 18	3 0	3 9	3 18
4	2 0	2 13	3 0	3 13	4 0	4 13	5 0	5 13
5	2 18	3 9	4 0	4 18	5 9	6 0	6 18	7 9
6	3 9	4 4	5 0	5 23	6 18	7 13	8 9	9 4
7	4 0	5 0	6 0	7 0	8 0	9 0	10 0	11 0
8	4 18	5 22	7 0	8 4	9 9	10 13	11 18	12 23
9	5 9	6 18	8 0	9 9	10 18	12 0	13 9	14 18
10	6 0	7 13	9 0	10 13	12 0	13 13	15 0	16 13
11	6 18	8 9	10 0	11 18	13 9	15 0	16 18	18 9
12	7 9	9 4	11 0	12 22	14 18	16 13	18 9	20 4
13	8 0	10 0	12 0	14 0	16 0	18 0	20 0	22 0
14	8 18	10 22	13 0	15 4	17 9	19 13	21 18	23 23
15	9 9	11 18	14 0	16 9	18 18	21 0	23 9	25 18
25	10 0	12 13	15 0	17 13	20 0	22 18	25 0	27 13
40	16 18	20 22	25 0	29 4	33 9	37 13	41 18	45 23
55	26 18	33 9	40 0	46 18	53 9	60 0	66 18	73 9
70	36 18	45 22	55 0	64 4	73 9	82 13	91 18	100 23
85	46 18	58 9	70 0	81 18	93 9	105 0	116 18	128 9
100	56 18	70 22	85 0	99 4	113 9	127 13	141 18	155 23
200	106 18	133 9	160 0	186 18	213 9	240 0	266 18	293 9
300	153 9	186 18	220 0	263 9	306 18	340 0	383 9	426 18
500	253 9	316 18	380 0	453 9	526 18	600 0	683 9	766 18
1000	506 18	633 9	760 0	906 18	1053 9	1200 0	1366 18	1533 9

TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length.	Depth 3 feet 3 inches.							
	Width 6 inches.	Width 7 inches.	Width 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 2	0 3	0 3	0 4	0 4	0 4	0 5	0 7
2	0 5	0 6	0 6	0 7	0 8	0 9	0 10	0 15
3	0 10	0 11	0 13	0 15	0 16	0 18	0 19	1 2
4	0 15	0 17	0 19	0 22	0 24	1 0	1 2	1 17
5	0 19	0 23	0 26	1 2	1 5	1 9	1 12	2 4
6	0 24	1 1	1 5	1 10	1 14	1 18	1 22	2 19
7	1 2	1 7	1 12	1 17	1 22	2 0	2 4	3 7
8	1 7	1 13	1 18	1 24	2 3	2 9	2 14	3 21
9	1 12	1 18	1 25	2 4	2 11	2 17	2 24	4 9
10	1 17	1 24	2 4	2 12	2 19	2 26	3 7	4 24
11	1 22	2 3	2 11	2 19	3 0	3 8	3 16	5 11
12	2 0	2 9	2 17	2 26	3 8	3 17	3 26	5 26
13	2 4	2 14	2 24	3 7	3 16	3 26	4 9	6 13
14	2 9	2 20	3 3	3 14	3 25	4 8	4 19	7 1
15	2 14	2 26	3 10	3 21	4 6	4 17	5 1	7 16
25	2 19	3 4	3 16	4 2	4 14	4 26	5 11	8 8
40	4 14	5 7	6 0	6 21	7 14	8 7	9 1	13 15
55	7 6	8 11	9 17	10 22	12 1	13 6	14 12	21 18
70	9 25	11 16	13 6	14 24	16 15	18 6	19 23	29 21
85	13 17	14 20	16 23	18 26	21 2	23 5	25 7	37 25
100	15 9	17 24	20 12	23 1	25 16	28 4	30 19	46 1
200	18 1	21 2	24 2	27 2	30 2	33 3	36 3	54 4
500	36 3	42 3	48 4	54 4	60 5	66 5	72 6	108 9
1000	90 7	105 9	120 10	135 11	150 12	165 14	180 15	270 23
	180 15	210 17	240 20	270 22	300 25	331 0	361 3	541 18

Yds.	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 10	0 12	0 15	0 17	0 19	0 22	0 24	1 0
2	0 19	0 24	1 2	1 7	1 12	1 17	1 22	2 0
3	1 12	1 22	2 4	2 14	2 24	3 7	3 16	3 26
4	2 4	2 19	3 7	3 21	4 9	4 24	5 11	5 26
5	2 24	3 16	4 9	5 1	5 21	6 13	7 6	7 25
6	3 16	4 14	5 11	6 9	7 6	8 3	9 1	9 25
7	4 9	5 11	6 13	7 16	8 18	9 20	10 22	11 25
8	5 1	6 9	7 16	8 23	10 3	11 10	12 17	13 24
9	5 21	7 6	8 18	10 3	11 15	13 0	14 12	15 24
10	6 13	8 3	9 20	11 10	13 0	14 17	16 7	17 24
11	7 6	9 1	10 23	12 17	14 12	16 7	18 1	19 23
12	7 25	9 25	11 25	13 24	15 24	17 24	19 23	21 23
13	8 18	10 23	13 0	15 4	17 9	19 13	21 18	23 22
14	9 10	11 20	14 2	16 12	18 21	21 3	23 13	25 22
15	10 3	12 17	15 4	17 19	20 6	22 20	25 7	27 22
25	10 22	13 15	16 7	18 26	21 18	24 10	27 2	29 21
40	18 1	22 15	27 2	31 16	36 3	40 17	45 4	49 18
55	23 24	36 3	43 9	50 15	57 21	65 0	72 6	79 12
70	39 19	49 18	59 16	69 14	79 12	89 10	99 8	109 6
85	50 15	63 5	75 22	88 13	101 3	113 20	126 10	139 1
100	61 10	76 20	92 2	107 12	122 21	138 3	153 13	168 22
200	122 21	150 15	180 15	216 18	252 21	288 24	325 0	361 3
500	361 3	451 10	541 18	631 25	722 6	812 13	902 21	993 1
1000	722 6	902 21	1083 9	1263 24	1444 12	1625 0	1805 15	1986 3

TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length.	Depth 3 feet 6 inches.							
	Width 6 inches.	Width 7 inches.	Width 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 3	0 3	0 3	0 4	0 4	0 5	0 5	0 8
2	0 5	0 6	0 7	0 8	0 9	0 10	0 10	0 16
3	0 10	0 12	0 14	0 16	0 17	0 19	0 21	1 4
4	0 16	0 18	0 21	0 24	0 26	1 2	1 4	1 20
5	0 21	0 24	1 1	1 4	1 8	1 11	1 15	2 9
6	0 26	1 4	1 8	1 12	1 17	1 21	1 25	2 25
7	1 4	1 10	1 15	1 20	1 25	2 4	2 9	3 13
8	1 10	1 16	1 22	2 1	2 7	2 13	2 19	4 2
9	1 15	1 22	2 2	2 9	2 10	2 23	3 3	4 18
10	1 20	2 1	2 9	2 17	2 25	3 6	3 13	5 7
11	1 25	2 7	2 16	2 25	3 6	3 15	3 24	5 23
12	2 4	2 13	2 23	3 6	3 15	3 25	4 7	6 11
13	2 9	2 19	3 3	3 13	3 24	4 7	4 18	7 0
14	2 14	2 26	3 10	3 21	4 6	4 17	5 1	7 16
15	2 19	3 5	3 17	4 2	4 14	5 0	5 12	8 4
25	2 25	3 11	3 24	4 10	4 23	5 9	5 22	8 20
40	4 23	5 18	6 13	7 8	8 3	8 25	9 19	14 16
55	7 21	9 2	10 10	11 18	12 26	14 7	15 15	23 9
70	10 19	12 13	14 7	16 1	17 22	19 16	21 10	32 3
85	13 16	15 24	18 4	20 11	22 18	24 26	27 6	40 22
100	16 14	19 8	22 1	24 21	27 15	30 8	33 1	49 16
200	32 24	45 10	51 23	64 9	64 23	71 8	77 21	116 18
500	97 6	113 11	129 17	145 22	163 1	178 6	194 12	291 18
1000	194 12	226 23	259 7	291 18	324 2	356 13	388 24	583 9

Yds.	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 10	0 13	0 16	0 18	0 21	0 24	0 26	1 1
2	0 21	0 26	1 4	1 10	1 15	1 20	1 25	2 4
3	1 15	1 25	2 9	2 19	3 3	3 13	3 24	4 7
4	2 9	2 25	3 13	4 2	4 18	5 7	5 22	6 11
5	3 8	3 24	4 18	5 12	6 6	7 0	7 21	8 15
6	3 24	4 23	5 22	6 22	7 21	8 20	9 19	10 19
7	4 18	5 22	7 0	8 4	9 9	10 13	11 18	12 23
8	5 12	6 22	8 4	9 14	10 24	12 7	13 16	14 26
9	6 6	7 21	9 9	10 24	12 12	14 0	15 15	17 3
10	7 0	8 20	10 13	12 7	14 0	15 20	17 13	19 7
11	7 21	9 19	11 18	13 16	15 15	17 13	19 12	21 10
12	8 15	10 19	12 22	14 26	17 3	19 7	21 10	23 14
13	9 9	11 18	14 0	16 9	18 18	21 0	23 9	25 18
14	10 3	12 17	15 4	17 19	20 6	22 20	25 7	27 22
15	10 24	13 16	16 9	19 1	21 21	24 13	27 6	29 25
25	11 18	14 16	17 13	20 11	23 9	26 7	29 4	32 2
40	19 12	24 8	29 4	34 1	38 24	43 20	48 16	53 13
55	31 3	38 24	46 18	54 12	62 6	70 0	77 21	85 15
70	42 21	53 13	64 4	74 23	85 15	96 7	106 25	117 17
85	54 12	68 1	81 18	95 7	108 24	123 13	136 3	149 19
100	66 3	82 17	99 4	115 19	132 6	148 20	165 7	181 22
200	132 6	164 3	198 8	230 12	264 12	300 0	336 12	372 24
500	330 6	405 3	495 3	594 3	696 3	810 0	924 12	1050 12
1000	660 12	810 6	990 6	1188 6	1392 6	1620 0	1848 12	2100 24



TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length.	Depth 3 feet 9 inches.							
	Width 6 inches.	Width 7 inches.	Width 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 3	0 3	0 4	0 4	0 5	0 5	0 6	0 8
2	0 6	0 7	0 7	0 8	0 9	0 10	0 11	0 17
3	0 11	0 13	0 15	0 17	0 19	0 21	0 22	1 7
4	0 17	0 20	0 22	0 25	1 1	1 4	1 7	1 24
5	0 22	0 26	1 3	1 7	1 10	1 14	1 18	2 13
6	1 1	1 6	1 10	1 15	1 20	1 25	2 2	3 3
7	1 7	1 12	1 18	1 24	2 2	2 8	2 13	3 20
8	1 12	1 19	1 25	2 5	2 12	2 18	2 25	4 10
9	1 18	1 25	2 6	2 13	2 21	3 1	3 9	5 0
10	1 24	2 5	2 13	2 22	3 3	3 13	3 20	5 17
11	2 2	2 12	2 21	3 3	3 13	3 22	4 4	6 7
12	2 8	2 18	3 1	3 12	3 22	4 5	4 16	6 24
13	2 13	2 25	3 9	3 20	4 4	4 16	5 0	7 13
14	2 19	3 4	3 16	4 2	4 14	4 26	5 11	8 3
15	2 25	3 11	3 24	4 10	4 23	5 9	5 22	8 20
20	3 3	3 17	4 4	4 19	5 6	5 20	6 7	9 10
25	5 6	6 2	6 25	7 22	8 18	9 15	10 11	15 17
30	8 9	9 19	11 3	12 13	13 24	15 7	16 18	25 0
35	11 12	13 10	15 7	17 5	19 3	21 0	22 25	34 10
40	14 16	17 0	19 12	21 24	24 8	26 20	29 4	43 20
45	17 19	20 18	23 16	26 15	29 14	32 13	35 11	53 3
50	20 22	24 8	27 21	31 7	34 19	38 5	41 18	62 13
60	41 18	48 16	55 15	62 13	69 12	76 10	83 9	125 0
70	104 4	121 14	138 24	156 7	173 16	190 26	208 9	312 13
800	208 9	243 1	277 21	313 31	347 6	381 25	416 16	625 0

	Width 2 feet.	Width 3 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 11	0 14	0 17	0 20	0 22	0 25	1 1	1 4
2	0 22	1 1	1 7	1 12	1 18	1 24	2 2	2 8
3	1 18	2 2	2 13	2 25	3 9	3 20	4 4	4 16
4	2 13	3 3	3 20	4 10	5 0	5 17	6 7	6 24
5	3 9	4 4	5 0	5 22	6 18	7 13	8 9	9 4
6	4 4	5 6	6 7	7 8	8 9	9 10	10 11	11 12
7	5 0	6 7	7 13	8 20	10 0	11 7	12 13	13 20
8	5 22	7 8	8 20	10 6	11 18	13 3	14 16	16 1
9	6 18	8 9	10 0	11 18	13 9	15 0	16 18	18 9
10	7 13	9 10	11 7	13 3	15 0	16 24	18 20	20 17
11	8 9	10 11	12 13	14 16	16 18	18 20	20 22	22 25
12	9 4	11 13	13 20	16 1	18 9	20 17	22 25	25 6
13	10 0	12 13	15 0	17 13	20 0	22 13	25 0	27 13
14	10 22	13 15	16 7	18 26	21 18	24 10	27 2	29 21
15	11 18	14 16	17 13	20 11	23 9	26 7	29 4	32 2
16	12 13	15 17	18 20	21 24	25 0	28 3	31 7	34 10
20	20 22	26 1	31 7	36 12	41 18	46 24	52 2	57 8
30	33 9	41 18	50 0	58 9	66 18	75 0	83 9	91 18
40	45 22	57 8	68 20	80 6	91 18	103 3	114 16	126 1
50	58 9	72 25	87 13	102 2	116 18	131 7	145 22	160 11
60	70 22	88 15	106 7	123 26	141 18	159 10	177 2	194 21
70	83 9	104 4	125 0	145 22	168 18	187 13	208 9	229 4
80	168 18	208 9	250 0	291 18	333 9	375 0	416 18	458 9
900	416 18	520 22	625 0	729 4	833 9	937 13	1041 18	1145 23
1000	833 9	1041 18	1250 0	1458 9	1666 18	1875 0	2083 9	2291 18

TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length.	Depth 4 feet.							
	Width 6 inches.	Width 7 inches.	Width 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
Yds.								
1	0 3	0 3	0 4	0 4	0 5	0 5	0 6	0 9
2	0 6	0 7	0 8	0 9	0 10	0 11	0 12	0 18
3	0 13	0 14	0 16	0 18	0 20	0 22	0 24	1 9
4	0 18	0 21	0 24	1 0	1 3	1 6	1 9	2 0
5	0 24	1 1	1 5	1 9	1 13	1 17	1 21	2 18
6	1 3	1 8	1 13	1 18	1 23	2 1	2 6	3 9
7	1 9	1 15	1 21	2 0	2 6	2 12	2 18	4 0
8	1 15	1 23	2 2	2 9	2 16	2 23	3 3	4 18
9	1 21	2 2	2 10	2 18	2 26	3 7	3 15	5 9
10	2 0	2 9	2 18	3 0	3 9	3 18	4 0	6 0
11	2 6	2 16	2 26	3 9	3 19	4 2	4 12	6 18
12	2 12	2 23	3 7	3 18	4 2	4 13	4 24	7 9
13	2 18	3 3	3 15	4 0	4 12	4 24	5 9	8 0
14	2 24	3 10	3 23	4 9	4 22	5 8	5 21	8 18
15	3 3	3 17	4 4	4 18	5 5	5 19	6 6	9 9
25	3 9	3 24	4 12	5 0	5 15	6 3	6 18	10 0
40	5 15	6 13	7 11	8 9	9 7	10 5	11 3	16 18
55	8 24	10 10	11 23	13 9	14 22	16 8	17 21	26 18
70	12 6	14 7	16 8	18 9	20 10	22 11	24 12	36 18
85	15 15	18 4	20 20	23 9	25 25	28 14	31 3	46 18
100	18 24	22 1	25 5	28 9	31 13	34 17	37 21	56 18
200	22 6	25 25	29 17	33 9	37 1	40 20	44 12	66 18
300	44 12	51 23	59 7	66 18	74 2	81 13	88 24	133 9
400	111 3	129 17	148 4	166 18	185 5	203 19	222 6	333 9
500	222 6	259 7	296 8	333 9	370 10	407 11	444 12	666 18

Yds.	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 12	0 15	0 18	0 21	0 24	1 0	1 3	1 6
2	0 24	1 3	1 9	1 15	1 21	2 0	2 6	2 12
3	1 21	2 6	2 18	3 3	3 15	4 0	4 12	4 24
4	2 18	3 9	4 0	4 18	5 9	6 0	6 18	7 9
5	3 15	4 12	5 9	6 6	7 3	8 0	8 24	9 21
6	4 12	5 15	6 18	7 21	8 24	10 0	11 3	12 6
7	5 9	6 18	8 0	9 9	10 18	12 0	13 9	14 18
8	6 6	7 21	9 9	10 24	12 12	14 0	15 15	17 3
9	7 3	8 24	10 18	12 12	14 6	16 0	17 21	19 15
10	8 0	10 0	12 0	14 0	16 0	18 0	20 0	22 0
11	8 24	11 3	13 9	15 15	17 21	20 0	22 6	24 12
12	9 21	12 6	14 18	17 3	19 15	22 0	24 12	26 24
13	10 18	13 9	16 0	18 18	21 9	24 0	26 18	29 9
14	11 15	14 12	17 9	20 6	23 3	26 0	28 24	31 21
15	12 12	15 15	18 18	21 21	24 24	28 0	31 3	34 6
25	13 9	16 18	20 0	23 9	26 18	30 0	33 9	36 18
40	22 6	27 21	33 9	38 24	44 12	50 0	55 15	61 3
55	35 15	44 12	53 9	62 6	71 3	80 0	88 24	97 21
70	48 24	61 3	73 9	85 15	97 21	110 0	122 6	134 12
85	62 6	77 21	93 9	108 24	124 12	140 0	155 15	171 3
100	75 15	94 12	113 9	132 6	151 3	170 0	188 24	207 21
200	111 3	133 9	155 15	177 21	200 0	222 6	244 12	266 18
300	177 21	222 6	266 18	311 3	355 15	400 0	444 12	488 24
400	244 12	299 12	355 15	400 0	444 12	488 24	533 9	577 21
500	311 3	355 15	400 0	444 12	488 24	533 9	577 21	622 6
600	377 21	422 6	466 18	511 3	555 15	600 0	644 12	688 24
700	444 12	488 24	533 9	577 21	622 6	666 18	711 3	755 15
800	511 3	555 15	600 0	644 12	688 24	733 9	777 21	822 6
900	577 21	622 6	666 18	711 3	755 15	800 0	844 12	888 24
1000	644 12	688 24	733 9	777 21	822 6	866 18	911 3	955 15

TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length.	Depth 4 feet 6 inches.							
	Width 6 inches.	Width 7 inches.	Width 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
$\frac{1}{2}$	0 3	0 4	0 4	0 5	0 6	0 6	0 7	0 10
1	0 7	0 8	0 9	0 10	0 11	0 12	0 13	0 20
2	0 13	0 16	0 18	0 20	0 22	0 25	1 0	1 13
3	0 20	0 24	1 0	1 3	1 7	1 10	1 13	2 7
4	1 0	1 4	1 9	1 13	1 18	1 22	2 0	3 0
5	1 7	1 12	1 18	1 24	2 2	2 8	2 13	3 20
6	1 13	1 20	2 0	2 7	2 13	2 20	3 0	4 13
7	1 20	2 1	2 9	2 17	2 25	3 6	3 13	5 7
8	2 0	2 9	2 18	3 0	3 9	3 18	4 0	6 0
9	2 7	2 17	3 0	3 10	3 20	4 3	4 13	6 20
10	2 13	2 25	3 9	3 20	4 4	4 16	5 0	7 13
11	2 20	3 6	3 18	4 3	4 16	5 1	5 13	8 7
12	3 0	3 13	4 0	4 13	5 0	5 13	6 0	9 0
13	3 7	3 21	4 9	4 24	5 11	5 26	6 13	9 20
14	3 13	4 3	4 18	5 7	5 22	6 11	7 0	10 13
15	3 20	4 10	5 0	5 17	6 7	6 24	7 13	11 7
25	6 7	7 8	8 9	9 10	10 11	11 12	12 13	18 20
40	10 0	11 18	13 9	15 0	16 18	18 9	20 0	30 0
55	13 20	16 1	18 9	20 17	22 25	25 6	27 13	41 7
70	17 13	20 11	23 9	26 7	29 4	32 2	35 0	52 13
85	21 7	24 21	28 9	31 24	35 11	38 26	42 13	63 20
100	25 0	29 4	33 9	37 13	41 18	45 22	50 0	75 0
200	50 0	58 9	66 18	75 0	83 9	91 18	100 0	150 0
300	125 0	145 22	166 18	187 13	208 9	229 4	250 0	375 0
1000	250 0	291 18	333 9	375 0	416 18	458 9	500 0	750 0

Yds.	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
$\frac{1}{2}$	0 13	0 17	0 20	0 24	1 0	1 3	1 7	1 10
1	1 0	1 7	1 13	1 20	2 0	2 7	2 13	2 20
2	2 0	2 13	3 0	3 13	4 0	4 13	5 0	5 13
3	3 0	3 20	4 13	5 7	6 0	6 20	7 13	8 7
4	4 0	5 0	6 0	7 0	8 0	9 0	10 0	11 0
5	5 0	6 7	7 13	8 20	10 0	11 7	12 13	13 20
6	6 0	7 13	9 0	10 13	12 0	13 13	15 0	16 13
7	7 0	8 20	10 13	12 7	14 0	15 20	17 13	19 7
8	8 0	10 0	12 0	14 0	16 0	18 0	20 0	22 0
9	9 0	11 7	13 13	15 20	18 0	20 7	22 13	24 20
10	10 0	13 13	15 0	17 13	20 0	22 13	25 0	27 13
11	11 0	13 20	16 13	19 7	22 0	24 20	27 13	30 7
12	12 0	15 0	18 0	21 0	24 0	27 0	30 0	33 0
13	13 0	16 7	19 13	22 20	26 0	29 7	32 13	35 20
14	14 0	17 13	21 0	24 13	28 0	31 13	35 0	38 13
15	15 0	18 20	22 13	26 7	30 0	33 20	37 13	41 7
25	25 0	31 7	37 13	43 20	50 0	56 7	62 13	68 20
40	40 0	50 0	60 0	70 0	80 0	90 0	100 0	110 0
55	55 0	68 20	82 13	96 7	110 0	123 20	137 13	151 7
70	70 0	87 13	105 0	122 13	140 0	157 13	175 0	192 13
85	85 0	106 7	127 13	148 20	170 0	191 7	212 13	233 20
100	100 0	125 0	150 0	175 0	200 0	225 0	250 0	275 0
200	200 0	250 0	300 0	350 0	400 0	450 0	500 0	550 0
500	500 0	625 0	750 0	875 0	1000 0	1125 0	1250 0	1375 0
1000	1000 0	1250 0	1500 0	1750 0	2000 0	2250 0	2500 0	2750 0

TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

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Length.	Depth 5 feet.							
	Width 6 inches.	Width 7 inches.	Width 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
$\frac{1}{2}$	0 4	0 4	0 5	0 6	0 6	0 7	0 7	0 11
1	0 7	0 9	0 10	0 11	0 12	0 14	0 15	0 22
2	0 15	0 17	0 20	0 22	0 25	1 0	1 3	1 18
3	0 22	0 26	1 3	1 7	1 10	1 14	1 18	2 13
4	1 3	1 8	1 13	1 18	1 23	2 1	2 6	3 9
5	1 10	1 17	1 23	2 2	2 8	2 15	2 21	4 4
6	1 18	1 25	2 6	2 13	2 21	3 1	3 9	5 0
7	1 25	2 7	2 16	2 25	3 6	3 15	3 24	5 22
8	2 6	2 16	2 26	3 9	3 19	4 2	4 12	6 18
9	2 13	2 25	3 9	3 20	4 4	4 16	5 0	7 13
10	2 21	3 6	3 19	4 4	4 17	5 2	5 15	8 9
11	3 1	3 15	4 2	4 16	5 2	5 16	6 3	9 4
12	3 9	3 24	4 12	5 0	5 15	6 3	6 18	10 0
13	3 16	4 6	4 22	5 11	6 0	6 17	7 6	10 22
14	3 24	4 14	5 5	5 22	6 13	7 3	7 21	11 18
15	4 4	4 23	5 15	6 7	6 25	7 17	8 9	12 13
25	6 25	8 3	9 7	10 11	11 15	12 20	13 24	20 22
40	11 3	12 26	14 22	16 18	18 14	20 10	22 6	33 9
55	15 7	17 22	20 10	22 25	25 12	28 0	30 15	45 22
70	19 12	22 18	25 25	29 4	32 11	35 17	38 24	58 9
85	23 16	27 15	31 13	35 11	39 9	43 8	47 6	70 22
100	27 21	32 11	37 1	41 18	46 8	50 25	55 15	83 9
200	55 15	64 22	74 2	83 9	92 16	101 23	111 3	166 18
500	138 24	162 1	185 5	208 9	231 13	254 17	277 21	416 18
1000	277 21	324 2	370 10	416 18	462 26	509 7	555 15	833 9

Yds.	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
$\frac{1}{2}$	0 15	0 19	0 22	0 26	1 3	1 7	1 10	1 14
1	1 3	1 10	1 18	1 25	2 6	2 13	2 21	3 1
2	2 6	2 21	3 9	3 24	4 12	5 0	5 15	6 3
3	3 9	4 4	5 0	5 22	6 18	7 13	8 9	9 4
4	4 12	5 15	6 18	7 21	8 24	10 0	11 3	12 6
5	5 15	6 25	8 9	9 19	11 3	12 13	13 24	15 7
6	6 18	8 9	10 0	11 18	13 9	15 0	16 18	18 9
7	7 21	9 19	11 18	13 16	15 15	17 13	19 12	21 10
8	8 24	11 3	13 9	15 15	17 21	20 0	22 6	24 12
9	10 0	12 13	15 0	17 13	20 0	22 13	25 0	27 13
10	11 3	13 24	16 18	19 12	22 6	25 0	27 21	30 15
11	12 6	15 7	18 9	21 10	24 12	27 13	30 15	33 16
12	13 9	16 18	20 0	23 9	26 18	30 0	33 9	36 18
13	14 12	18 1	21 18	25 7	28 24	32 13	36 3	39 19
14	15 15	19 12	23 9	27 6	31 3	35 0	38 24	42 21
15	16 18	20 22	25 0	29 4	33 9	37 13	41 18	45 22
25	27 21	34 19	41 18	48 16	55 15	62 13	69 12	76 10
40	44 12	55 15	66 18	77 21	88 24	100 0	111 3	122 6
55	61 3	76 10	91 18	106 25	122 6	137 13	152 21	168 1
70	77 21	97 6	116 18	136 3	155 15	175 0	194 12	213 24
85	94 12	118 1	141 18	165 7	188 24	212 13	236 3	259 19
100	111 3	138 24	166 18	194 12	222 6	250 0	277 21	305 15
200	222 6	277 21	333 9	388 24	444 12	500 0	555 15	611 3
500	655 15	694 12	833 9	972 6	1111 3	1250 0	1388 24	1527 21
1000	1111 3	1388 24	1666 18	1944 12	2222 6	2500 0	2777 21	3055 15

TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length.	Depth 5 feet 6 inches.							
	Width 6 inches.	Width 7 inches.	Width 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 4	0 5	0 5	0 6	0 7	0 8	0 8	0 12
2	0 8	0 10	0 11	0 12	0 14	0 15	0 16	0 25
3	0 16	0 19	0 22	0 25	1 0	1 3	1 6	1 22
4	0 25	1 2	1 6	1 10	1 14	1 18	1 22	2 20
5	1 6	1 11	1 17	1 22	2 1	2 6	2 12	3 18
6	1 14	1 21	2 1	2 8	2 15	2 22	3 1	4 16
7	1 22	2 4	2 12	2 20	3 1	3 10	3 18	5 13
8	2 4	2 13	2 23	3 6	3 15	3 25	4 7	6 11
9	2 12	2 23	3 7	3 18	4 2	4 13	4 24	7 9
10	2 20	3 6	3 18	4 3	4 16	5 1	5 13	8 7
11	3 1	3 15	4 2	4 16	5 2	5 16	6 3	9 4
12	3 10	3 25	4 13	5 1	5 16	6 4	6 19	10 2
13	3 18	4 7	4 24	5 13	6 3	6 19	7 9	11 0
14	3 26	4 17	5 8	5 26	6 17	7 8	7 25	11 25
15	4 7	5 0	5 19	6 11	7 3	7 23	8 15	12 22
25	4 16	5 9	6 3	6 24	7 17	8 11	9 4	13 20
40	7 17	8 25	10 5	11 12	12 20	14 0	15 7	22 25
55	12 6	14 7	16 8	18 9	20 10	22 11	24 12	36 18
70	16 22	19 16	22 11	25 6	28 0	30 22	33 16	50 11
85	21 10	24 26	28 14	32 2	35 17	39 6	42 21	64 4
100	25 26	30 8	34 17	38 26	43 8	47 17	51 26	77 25
120	30 15	35 17	40 20	45 22	50 25	56 0	61 3	91 18
140	35 17	41 8	47 13	53 18	60 23	67 1	74 6	109 9
160	41 3	48 6	55 13	62 18	70 23	78 2	86 15	129 9
180	48 21	56 6	64 19	72 4	81 17	90 2	99 15	150 9
200	56 15	65 13	74 11	83 9	93 7	103 5	113 3	172 18

	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 16	0 21	0 25	1 2	1 6	1 10	1 14	1 18
2	1 6	1 14	1 22	2 4	2 12	2 20	3 1	3 10
3	2 12	3 1	3 18	4 7	4 24	5 13	6 3	6 19
4	3 18	4 16	5 13	6 11	7 9	8 7	9 4	10 2
5	4 24	6 3	7 9	8 15	9 21	11 0	12 6	13 12
6	5 6	7 17	9 4	10 19	12 6	13 20	15 7	16 22
7	7 9	9 4	11 0	12 22	14 18	16 13	18 9	20 4
8	8 15	10 19	12 22	14 26	17 3	19 7	21 10	23 14
9	9 21	12 6	14 18	17 3	19 15	22 0	24 12	26 24
10	11 0	13 20	16 13	19 7	22 0	24 20	27 13	30 7
11	12 6	15 7	18 9	21 10	24 12	27 13	30 13	33 16
12	13 12	16 22	20 4	23 14	26 24	30 7	33 16	36 26
13	14 18	18 9	22 0	25 18	29 9	33 0	36 18	40 9
14	15 24	19 23	23 22	27 22	31 21	35 20	39 19	43 19
15	17 3	21 10	25 15	29 25	34 6	38 13	42 21	47 1
16	18 9	22 25	27 13	32 2	36 18	41 7	45 22	50 11
25	30 15	38 5	45 22	53 13	61 3	68 20	76 10	84 1
40	48 24	61 3	73 9	85 15	97 21	110 0	122 6	134 12
55	67 6	84 1	100 22	117 17	134 12	151 7	168 1	184 23
70	85 15	106 25	128 9	149 19	171 3	192 13	213 24	235 7
85	103 24	129 23	155 22	181 22	207 21	233 20	259 19	285 19
100	122 6	152 21	183 9	213 24	244 12	275 0	305 15	336 3
120	144 12	180 15	216 18	256 18	297 21	338 24	379 3	420 6
140	171 3	216 24	261 18	313 12	364 12	417 0	467 15	517 15
160	202 6	252 21	302 9	373 12	437 12	496 0	555 15	615 3
180	237 6	292 21	352 9	437 12	507 12	576 0	635 15	695 3
200	276 6	336 21	402 9	507 12	587 12	666 0	725 15	785 3
220	318 6	384 21	462 9	587 12	677 12	766 0	825 15	885 3
240	363 6	432 21	522 9	677 12	777 12	876 0	935 15	995 3
260	411 6	486 21	591 9	777 12	887 12	996 0	1055 15	1115 3
280	462 6	546 21	666 9	887 12	1007 12	1126 0	1225 15	1285 3
300	516 6	606 21	741 9	1007 12	1137 12	1276 0	1375 15	1445 3
320	573 6	672 21	821 9	1137 12	1287 12	1446 0	1555 15	1625 3
340	633 6	744 21	906 9	1287 12	1447 12	1647 0	1765 15	1825 3
360	696 6	816 21	996 9	1447 12	1647 12	1876 0	1995 15	2045 3
380	762 6	894 21	1091 9	1647 12	1876 12	2136 0	2255 15	2325 3
400	831 6	978 21	1191 9	1876 12	2136 12	2426 0	2555 15	2625 3
420	903 6	1068 21	1296 9	2136 12	2447 12	2746 0	2885 15	2945 3
440	978 6	1164 21	1406 9	2447 12	2807 12	3106 0	3255 15	3345 3
460	1056 6	1266 21	1521 9	2807 12	3207 12	3506 0	3715 15	3845 3
480	1137 6	1374 21	1641 9	3207 12	3647 12	3946 0	4215 15	4345 3
500	1221 6	1488 21	1766 9	3647 12	4127 12	4426 0	4755 15	4845 3
520	1308 6	1608 21	1896 9	4127 12	4647 12	4946 0	5255 15	5345 3
540	1399 6	1734 21	2031 9	4647 12	5207 12	5506 0	5815 15	5845 3
560	1494 6	1866 21	2171 9	5207 12	5807 12	6106 0	6415 15	6445 3
580	1593 6	2004 21	2316 9	5807 12	6447 12	6746 0	7055 15	7045 3
600	1696 6	2148 21	2466 9	6447 12	7127 12	7426 0	7755 15	7645 3
620	1803 6	2298 21	2621 9	7127 12	7847 12	8146 0	8455 15	8245 3
640	1914 6	2454 21	2781 9	7847 12	8607 12	8906 0	9195 15	8845 3
660	2029 6	2616 21	2946 9	8607 12	9407 12	9706 0	10015 15	9445 3
680	2148 6	2784 21	3116 9	9407 12	10247 12	10546 0	10855 15	10045 3
700	2271 6	2958 21	3291 9	10247 12	11127 12	11426 0	11735 15	10645 3
720	2398 6	3138 21	3471 9	11127 12	12047 12	12346 0	12655 15	11245 3
740	2529 6	3324 21	3656 9	12047 12	13007 12	13306 0	13615 15	11845 3
760	2664 6	3516 21	3846 9	13007 12	14007 12	14306 0	14615 15	12445 3
780	2803 6	3714 21	4041 9	14007 12	15047 12	15346 0	15655 15	13045 3
800	2946 6	3918 21	4241 9	15047 12	16127 12	16426 0	16735 15	13645 3
820	3093 6	4128 21	4446 9	16127 12	17247 12	17546 0	17855 15	14245 3
840	3244 6	4344 21	4656 9	17247 12	18407 12	18706 0	19015 15	14845 3
860	3399 6	4566 21	4871 9	18407 12	19607 12	19906 0	20215 15	15445 3
880	3558 6	4794 21	5091 9	19607 12	20847 12	21146 0	21455 15	16045 3
900	3721 6	5028 21	5316 9	20847 12	22127 12	22426 0	22735 15	16645 3
920	3888 6	5268 21	5546 9	22127 12	23447 12	23746 0	24055 15	17245 3
940	4059 6	5514 21	5781 9	23447 12	24807 12	25106 0	25415 15	17845 3
960	4234 6	5766 21	6021 9	24807 12	26207 12	26506 0	26815 15	18445 3
980	4413 6	6024 21	6266 9	26207 12	27647 12	27946 0	28255 15	19045 3
1000	4596 6	6288 21	6516 9	27647 12	29127 12	29426 0	29735 15	19645 3

TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length	Depth 6 feet.							
	Width 6 inches.	Width 7 inches.	Width 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 4	0 5	0 6	0 7	0 7	0 8	0 9	0 13
2	0 9	0 10	0 12	0 13	0 15	0 16	0 18	1 0
3	0 18	0 21	0 24	1 0	1 3	1 6	1 9	2 0
4	1 0	1 4	1 9	1 13	1 18	1 23	2 0	3 0
5	1 9	1 15	1 21	2 0	2 6	2 12	2 18	4 0
6	1 18	1 25	2 6	2 13	2 21	3 1	3 9	5 0
7	2 0	2 9	2 18	3 0	3 9	3 18	4 0	6 0
8	2 9	2 19	3 3	3 13	3 24	4 7	4 18	7 0
9	2 18	3 3	3 15	4 0	4 12	4 24	5 9	8 0
10	3 0	3 13	4 0	4 13	5 0	5 13	6 0	9 0
11	3 9	3 24	4 12	5 0	5 15	6 3	6 18	10 0
12	3 18	4 7	4 24	5 13	6 3	6 19	7 9	11 0
13	4 0	4 18	5 9	6 0	6 18	7 9	8 0	12 0
14	4 9	5 1	5 21	6 13	7 6	7 25	8 18	13 0
15	4 18	5 12	6 6	7 0	7 21	8 15	9 9	14 0
25	5 0	5 22	6 18	7 13	8 9	9 4	10 0	15 0
40	8 9	9 19	11 3	12 13	13 24	15 7	16 18	25 0
55	13 9	15 15	17 21	20 0	22 6	24 12	26 18	40 0
70	18 9	21 10	24 12	27 13	30 15	33 16	36 18	55 0
85	23 9	27 6	31 3	35 0	38 24	42 21	46 18	70 0
100	28 9	33 1	37 21	42 13	47 6	51 25	56 18	85 0
200	33 9	38 24	44 12	50 0	55 15	61 3	66 18	100 0
300	66 18	77 21	88 24	100 0	111 3	122 6	133 9	200 0
400	166 18	194 12	222 6	250 0	277 21	305 15	333 9	500 0
500	333 9	388 24	444 12	500 0	555 15	611 3	666 18	1000 0

Yds.	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
1	0 18	0 22	1 0	1 4	1 9	1 13	1 18	1 23
2	1 9	1 18	2 0	2 9	2 18	3 0	3 9	3 18
3	2 18	3 9	4 0	4 18	5 9	6 0	6 18	7 9
4	4 0	5 0	6 0	7 0	8 0	9 0	10 0	11 0
5	5 9	6 18	8 0	9 9	10 18	12 0	13 9	14 18
6	6 18	8 9	10 0	11 18	13 9	15 0	16 18	18 9
7	8 0	10 0	12 0	14 0	16 0	18 0	20 0	22 9
8	9 9	11 18	14 0	16 9	18 18	21 0	23 9	25 18
9	10 18	13 9	16 0	18 18	21 9	24 0	26 18	29 9
10	12 0	15 0	18 0	21 0	24 0	27 0	30 0	33 0
11	13 9	16 18	20 0	23 9	26 18	30 0	33 9	36 18
12	14 18	18 9	22 0	25 18	29 9	33 0	36 18	40 9
13	16 0	20 0	24 0	28 0	32 0	36 0	40 0	44 0
14	17 9	21 18	26 0	30 9	34 18	39 0	43 9	47 18
15	18 18	23 9	28 0	32 18	37 9	42 0	46 18	51 9
25	20 0	25 0	30 0	35 0	40 0	45 0	50 0	55 0
33	33 9	41 18	40 0	58 9	66 18	75 0	83 9	91 18
40	53 9	66 18	60 0	93 9	106 18	120 0	133 9	146 18
55	73 9	91 18	110 0	128 9	146 18	165 0	183 9	201 18
70	93 9	116 18	140 0	163 9	186 18	210 0	233 9	256 18
85	113 9	141 18	170 0	193 9	226 18	255 0	283 9	311 18
100	133 9	166 18	200 0	233 9	266 18	300 0	333 9	366 18
200	266 18	333 9	400 0	466 18	533 9	600 0	666 18	733 9
300	666 18	833 9	1000 0	1166 18	1333 9	1500 0	1666 18	1833 9
400	1333 9	1666 18	2000 0	2333 9	2666 18	3000 0	3333 9	3666 18

TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length.	Depth 6 feet 6 inches.							
	Width 6 inches.	Width 7 inches.	Width 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
$\frac{1}{2}$	0 5	0 6	0 6	0 7	0 8	0 9	0 10	0 15
1	0 10	0 11	0 13	0 15	0 16	0 18	0 19	1 2
2	0 19	0 23	0 26	1 2	1 5	1 9	1 12	2 4
3	1 2	1 7	1 12	1 17	1 22	2 0	2 4	3 7
4	1 12	1 18	1 25	2 4	2 11	2 17	2 24	4 9
5	1 22	2 3	2 11	2 19	3 0	3 8	3 16	5 11
6	2 4	2 14	2 24	3 7	3 16	3 26	4 9	6 13
7	2 14	2 26	3 10	3 21	4 6	4 17	5 1	7 16
8	2 24	3 10	3 23	4 9	4 22	5 18	5 21	8 18
9	3 7	3 21	4 9	4 24	5 11	5 26	6 13	9 20
10	3 16	4 6	4 22	5 11	6 0	6 17	7 6	10 22
11	3 26	4 17	5 8	5 26	6 17	7 8	7 25	11 25
12	4 9	5 1	5 21	6 13	7 6	7 25	8 18	13 0
13	4 19	5 13	6 7	7 1	7 22	8 16	9 10	14 2
14	5 1	5 24	6 20	7 16	8 11	9 7	10 3	15 4
15	5 11	6 9	7 6	8 3	9 1	9 25	10 22	16 7
25	9 1	10 14	12 1	13 15	15 1	16 15	18 1	27 2
40	14 12	16 23	19 7	21 18	24 2	26 13	28 24	43 9
55	19 23	23 6	26 13	29 21	33 3	36 11	39 19	59 16
70	25 7	29 13	33 19	37 25	42 3	46 9	50 15	75 22
85	30 19	35 22	40 25	46 1	51 4	56 7	61 10	92 2
100	36 3	42 3	48 4	54 4	60 5	66 5	72 6	108 9
200	72 6	84 7	96 8	108 9	120 10	132 11	144 12	216 18
500	180 15	210 17	240 20	270 22	300 25	331 0	361 3	541 18
1000	361 3	421 8	481 13	541 18	601 23	662 1	722 6	1083 9

Yds.	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
$\frac{1}{2}$	0 19	0 24	1 2	1 7	1 12	1 17	1 22	2 0
1	1 12	1 22	2 4	2 14	2 24	3 7	3 16	3 26
2	2 24	3 16	4 9	5 1	5 21	6 13	7 6	7 25
3	4 9	5 11	6 13	7 16	8 18	9 20	10 22	11 25
4	5 21	7 6	8 18	10 3	11 15	13 0	14 12	15 24
5	7 6	9 1	10 22	12 17	14 12	16 7	18 1	19 23
6	8 18	10 22	13 0	15 4	17 9	19 13	21 18	23 22
7	10 3	12 17	15 4	17 19	20 6	22 20	25 7	27 22
8	11 15	14 12	17 9	20 6	23 3	26 0	28 24	31 21
9	13 0	16 7	19 13	22 20	26 0	29 7	32 13	35 20
10	14 12	18 1	21 18	25 7	28 24	32 13	36 3	39 19
11	15 24	19 23	23 23	27 22	31 21	35 20	39 19	43 19
12	17 9	21 18	26 0	30 9	34 18	39 0	43 9	47 18
13	18 21	23 13	28 4	32 23	37 15	42 7	46 25	51 17
14	20 6	25 7	30 9	35 10	40 12	45 13	50 15	55 16
15	21 18	27 2	32 13	37 25	43 9	48 20	54 4	59 16
25	36 3	45 4	54 4	63 5	72 6	81 7	90 7	99 8
40	57 21	72 6	86 18	101 3	115 15	130 0	144 12	158 24
55	79 12	99 8	119 4	139 1	158 24	178 50	198 16	218 13
70	101 3	126 10	151 18	176 25	202 6	227 13	252 21	278 1
85	123 21	153 13	184 4	214 23	245 15	276 7	306 25	337 17
100	144 12	180 15	216 18	252 21	288 24	325 0	361 3	397 6
200	288 24	361 3	433 9	505 15	577 21	650 0	722 6	794 12
500	722 6	902 21	1083 9	1263 24	1444 12	1625 0	1805 15	1986 3
1000	1444 12	1805 15	2166 18	2527 21	2888 24	3250 0	3611 3	3972 6

TABLE IV.—CUBIC YARDS OF DIGGING IN DRAINS, ETC.

Length.	Depth 7 feet.							
	Width 5 inches.	Width 7 inches.	Width. 8 inches.	Width 9 inches.	Width 10 in.	Width 11 in.	Width 1 foot.	Width 1 ft. 6 in.
Yds.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
$\frac{1}{2}$	0 5	0 6	0 7	0 8	0 9	0 10	0 10	0 16
1	0 10	0 12	0 14	0 16	0 17	0 19	0 21	1 4
2	0 21	0 24	1 1	1 4	1 8	1 11	1 15	2 9
3	1 4	1 10	1 15	1 20	1 25	2 4	2 9	3 13
4	1 15	1 22	2 2	2 9	2 16	2 23	3 3	4 18
5	1 25	2 7	2 16	2 25	3 6	3 15	3 24	5 22
6	2 9	2 19	3 3	3 13	3 24	4 7	4 18	7 0
7	2 19	3 5	3 17	4 2	4 14	5 0	5 12	8 4
8	3 3	3 17	4 4	4 18	5 5	5 19	6 6	9 9
9	3 13	4 2	4 18	5 7	5 22	6 11	7 0	10 13
10	3 24	4 14	5 5	5 22	6 13	7 3	7 21	11 18
11	4 7	5 0	5 19	6 11	7 3	7 23	8 15	12 22
12	4 18	5 12	6 6	7 0	7 21	8 15	9 9	14 0
13	5 1	5 24	6 20	7 16	8 11	9 7	10 3	15 4
14	5 12	6 9	7 7	8 4	9 2	9 26	10 24	16 9
15	5 23	6 22	7 21	8 20	9 19	10 19	11 18	17 13
25	9 19	11 9	12 26	14 16	16 5	17 22	19 12	29 4
40	15 15	18 4	20 20	23 9	25 25	28 14	31 3	46 18
55	21 10	24 26	28 14	32 2	35 17	39 6	42 21	64 4
70	27 6	31 20	36 8	40 22	45 10	49 24	54 12	81 18
85	33 1	38 15	44 2	49 16	55 2	60 16	66 3	99 4
100	38 24	45 10	51 23	58 9	64 22	71 8	77 21	116 18
200	77 21	90 20	103 19	116 18	129 17	142 16	155 15	233 9
500	194 12	226 23	259 7	291 18	324 2	356 13	388 24	583 9
1000	388 24	453 19	518 14	583 9	648 4	712 26	777 21	1166 18

Yds.	Width 2 feet.	Width 2 ft. 6 in.	Width 3 feet.	Width 3 ft. 6 in.	Width 4 feet.	Width 4 ft. 6 in.	Width 5 feet.	Width 5 ft. 6 in.
	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.	yds. ft.
$\frac{1}{2}$	0 21	0 26	1 4	1 10	1 15	1 20	1 25	2 4
1	1 15	1 25	2 9	2 19	3 3	3 13	3 24	4 7
2	3 3	3 24	4 18	5 12	6 6	7 0	7 21	8 15
3	4 18	5 22	7 0	8 4	9 9	10 13	11 18	12 22
4	6 6	7 21	9 9	10 24	12 12	14 0	15 15	17 3
5	7 21	9 19	11 18	13 16	15 15	17 13	19 12	21 10
6	9 9	11 18	14 0	16 9	18 18	21 0	23 9	25 18
7	10 24	13 16	16 9	19 1	21 21	24 13	27 6	29 25
8	12 12	15 15	18 18	21 21	24 24	28 0	31 3	34 6
9	14 0	17 13	21 0	24 13	28 0	31 13	35 0	38 13
10	15 15	19 12	23 9	27 6	31 3	35 0	38 24	42 21
11	17 3	21 10	25 18	29 25	34 6	38 13	42 21	47 1
12	18 18	23 9	28 0	32 18	37 9	42 0	46 18	51 9
13	20 6	25 7	30 9	35 10	40 12	45 13	50 15	55 16
14	21 21	27 6	32 18	38 3	43 15	49 0	54 12	59 24
15	23 9	29 4	35 0	40 22	46 18	52 13	58 9	64 4
25	38 24	48 16	58 9	68 1	77 21	87 13	97 6	106 25
40	62 6	77 21	93 9	108 24	124 12	140 0	155 15	171 3
55	85 15	106 25	128 9	149 19	171 3	192 13	213 24	235 7
70	108 24	136 3	163 9	190 15	217 21	245 0	272 6	299 12
85	132 6	165 7	198 9	231 10	264 12	297 13	330 15	363 16
100	155 15	194 12	233 9	272 6	311 3	350 0	388 24	427 21
200	311 3	388 24	466 18	544 12	622 6	700 0	777 21	855 15
500	777 21	972 6	1166 18	1361 3	1555 15	1750 0	1944 12	2138 24
1000	1555 15	1944 12	2333 9	2722 6	3111 3	3500 0	3888 24	4277 21



## TABLES V.—X.

### TABLE V.

**SHOWS THE EQUIVALENT NUMBER OF SCOTCH ACRES, ROODS, FALLS, AND ELLS, IN IMPERIAL ACRES, ROODS, AND POLES, FROM 1 POLE TO 3000 ACRES; ALSO, THE EQUIVALENT VALUE PER SCOTCH ACRE, FROM 6d. TO £100 PER IMPERIAL ACRE.**

The first and third columns on the left-hand side of the page contain the poles, roods, and acres Imperial; the second and fourth columns contain the equivalents in Scotch acres, roods, falls, and ells; the fifth column contains the value per Imperial acre, and the sixth column contains the equivalent value per Scotch acre.

The succeeding five Tables are so similar to this one, that no description of them, or examples, will be necessary. It may be proper, however, to state that the basis on which the Tables are constructed is the proportion which the Imperial, Scotch, and Irish acres bear to one another; thus, the Imperial acre contains 4840 square yards, taking the Scotch ell as measuring 37.0598 Imperial inches, the Scotch acre will contain 6104.1279 square yards, and the Irish acre contains 7840 square yards. The equivalents in measure and value are calculated in these proportions.

With the exception of the Tables in which Imperial and Irish measures are compared together, fractions under a foot are neglected; in turning Imperial and Irish measures into Scotch, the fractions of an ell are set down in the decimal form; and the money equivalents are set down to the nearest farthing.

The subjoined Table of Imperial, Scotch, and Irish land measures is given for convenience of reference.

Imperial.	Irish.	Scotch.
9 feet = 1 yard.	9 feet = 1 yard.	9.5377 feet = 1 ell.
30½ yards = 1 pole.	49 yards = 1 pole.	36 ells = 1 fall.
40 poles = 1 rood.	40 poles = 1 rood.	40 falls = 1 rood.
4 roods = 1 acre.	4 roods = 1 acre.	4 roods = 1 acre.

**EXAMPLE I.** A field measures 28 acres, 3 roods, 29 poles Imperial, what is its content in Scotch acres, &c.; and what is its value per Scotch acre at the rate of £60 per Imperial acre?

In the Table, opposite 28 acres Im- perial, stands . . . .	Ac.	Ro.	Falls.	Ells.
Opposite 3 roods stands . . . .	22	0	32	7.99
And opposite 29 poles stands . . . .	0	2	15	5.35
	0	0	22	35.79

The content in Scotch acres, . . . . 22 3 30 13.03

In the same Table, opposite £60, the value Imperial, stands £75, 13s. 5d., the value per Scotch acre.

EXAMPLE II. A farm measures 350 acres, 2 roods, 15 falls, Scotch measure, and is let at a rent of £1, 15s. per acre; required its content in Imperial measure, and its equivalent rent per Imperial acre?

In Table VI., opposite 300 acres Scotch, stands . . . .	Ac.	Ro.	Po.	Yds.	Ft.
Opposite 50 acres stands . . . .	378	1	16	24	3
Opposite 2 roods stands . . . .	63	0	9	14	1
And opposite 15 falls stands . . . .	0	2	20	27	0
	0	0	18	27	6

The content in Imperial measure, 442 0 26 2 3½

In the same Table, opposite £1, stands . . . .	£	s.	d.
And opposite 15s. stands . . . .	0	15	10½
	0	11	10½

Rent per Imperial acre . . . . . £1 7 9

In adding together two or more contents in which there are feet and yards, and the sum of the yards is above 30, it is more convenient first to add together the yards and feet as they stand; thus, in the foregoing example, there are 92 yards 10 feet, and as 30½ yards make a pole, there will be 3 poles in this, or 90 yards 6½ feet to subtract from 92 yards 10 feet, leaving 2 yards 3½ feet, which set down, and carry 3 to the poles column, making 66 poles; 40 poles making 1 rood, set down 26, and carry 1 to the roods, which makes 4 roods, or 1 acre; set down a cypher, and carry 1 to the acres.

TABLE VI.

SHOWS THE EQUIVALENT NUMBER OF IMPERIAL ACRES IN SCOTCH ACRES, AND THE EQUIVALENT VALUE PER IMPERIAL ACRE.

TABLE VII.

SHOWS THE EQUIVALENT NUMBER OF IRISH ACRES IN IMPERIAL ACRES, AND THE EQUIVALENT VALUE PER IRISH ACRE.

## TABLE VIII.

SHOWS THE EQUIVALENT NUMBER OF IMPERIAL ACRES IN IRISH ACRES, AND THE EQUIVALENT VALUE PER IMPERIAL ACRE.

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## TABLE IX.

SHOWS THE EQUIVALENT NUMBER OF IRISH ACRES IN SCOTCH ACRES, AND THE EQUIVALENT VALUE PER IRISH ACRE.

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## TABLE X.

SHOWS THE EQUIVALENT NUMBER OF SCOTCH ACRES IN IRISH ACRES, AND THE EQUIVALENT VALUE PER SCOTCH ACRE.

TABLE V.—IMPERIAL ACRES CONVERTED INTO SCOTCH.

MEASURE.						VALUE.					
Impl.	Scotch.			Impl.	Scotch.			Impl.	Scotch.		
Poles.	Ac.	Ro.	Falls. Ells.	Acres.	Ac.	Ro.	Falls. Ells.		£	s.	d.
1	0	0	0 28.54	4	3	0	27 16.55	6d.	0	0	7 <sup>1</sup> / <sub>2</sub>
2	0	0	1 21.09	5	3	3	34 11.69	1s.	0	1	3 <sup>1</sup> / <sub>4</sub>
3	0	0	2 13.63	6	4	3	1 6.83	2	0	2	6 <sup>1</sup> / <sub>2</sub>
4	0	0	3 6.18	7	5	2	8 1.97	3	0	3	9 <sup>1</sup> / <sub>2</sub>
5	0	0	3 34.72	8	6	1	14 33.11	4	0	5	0 <sup>1</sup> / <sub>2</sub>
6	0	0	4 27.26	9	7	0	21 28.25	5	0	6	3 <sup>1</sup> / <sub>2</sub>
7	0	0	5 19.81	10	7	3	28 23.39	10	0	12	7 <sup>1</sup> / <sub>2</sub>
8	0	0	6 12.35	11	8	2	35 18.53	15	0	18	11
9	0	0	7 4.90	12	9	2	2 13.66	£1	1	5	2 <sup>1</sup> / <sub>2</sub>
10	0	0	7 33.44	13	10	1	9 8.80	2	2	10	5 <sup>1</sup> / <sub>2</sub>
11	0	0	8 25.99	14	11	0	16 3.94	3	3	15	8
12	0	0	9 18.53	15	11	3	22 35.08	4	5	0	10 <sup>1</sup> / <sub>2</sub>
13	0	0	10 11.08	16	12	2	29 30.22	5	6	6	1 <sup>1</sup> / <sub>2</sub>
14	0	0	11 3.62	17	13	1	36 25.36	6	7	11	4
15	0	0	11 32.17	18	14	1	3 20.50	7	8	16	6 <sup>1</sup> / <sub>2</sub>
16	0	0	12 24.71	19	15	0	10 15.64	8	10	1	9 <sup>1</sup> / <sub>2</sub>
17	0	0	13 17.26	20	15	3	17 10.78	9	11	7	0 <sup>1</sup> / <sub>2</sub>
18	0	0	14 9.80	21	16	2	24 5.91	10	12	12	2 <sup>1</sup> / <sub>2</sub>
19	0	0	15 2.35	22	17	1	31 1.05	11	13	17	5 <sup>1</sup> / <sub>2</sub>
20	0	0	15 30.89	23	18	0	37 32.19	12	15	2	8 <sup>1</sup> / <sub>2</sub>
21	0	0	16 23.43	24	19	0	4 27.33	13	16	7	11
22	0	0	17 15.98	25	19	3	11 22.47	14	17	13	11 <sup>1</sup> / <sub>2</sub>
23	0	0	18 8.52	26	20	2	18 17.61	15	18	18	4 <sup>1</sup> / <sub>2</sub>
24	0	0	19 1.07	27	21	1	25 12.75	16	20	3	7
25	0	0	19 29.61	28	22	0	32 7.89	17	21	8	9 <sup>1</sup> / <sub>2</sub>
26	0	0	20 22.16	29	22	3	39 3.03	18	22	14	0 <sup>1</sup> / <sub>2</sub>
27	0	0	21 14.70	30	23	3	5 34.17	19	23	19	3
28	0	0	22 7.24	40	31	2	34 21.56	20	25	4	5 <sup>1</sup> / <sub>2</sub>
29	0	0	22 35.79	50	39	2	23 8.94	21	26	9	8 <sup>1</sup> / <sub>2</sub>
30	0	0	23 28.34	60	47	2	11 32.33	22	27	14	11
31	0	0	24 20.88	70	55	2	0 19.72	23	29	0	12 <sup>1</sup> / <sub>2</sub>
32	0	0	25 13.42	80	63	1	29 7.11	24	30	5	4 <sup>1</sup> / <sub>2</sub>
33	0	0	26 5.97	90	71	1	17 30.50	25	31	10	7
34	0	0	26 34.51	100	79	1	6 17.89	26	32	15	9 <sup>1</sup> / <sub>2</sub>
35	0	0	27 27.06	200	158	2	12 35.78	27	34	1	0 <sup>1</sup> / <sub>2</sub>
36	0	0	28 19.60	300	237	3	19 17.67	28	35	6	3 <sup>1</sup> / <sub>2</sub>
37	0	0	29 12.15	400	317	0	25 35.56	29	36	11	5 <sup>1</sup> / <sub>2</sub>
38	0	0	30 4.60	500	396	1	32 17.45	30	37	16	8 <sup>1</sup> / <sub>2</sub>
39	0	0	30 33.24	600	475	2	38 35.34	40	50	8	11 <sup>1</sup> / <sub>2</sub>
40	0	0	31 25.78	700	555	0	5 17.23	50	63	1	2 <sup>1</sup> / <sub>2</sub>
41	0	1	23 15.57	800	634	1	11 35.12	60	75	13	5
42	0	2	15 5.35	900	713	2	18 17.01	70	88	5	8
43	0	3	6 31.14	1000	792	3	24 34.91	80	100	17	10 <sup>1</sup> / <sub>2</sub>
44	1	2	13 26.28	2000	1585	3	9 33.81	90	113	10	1 <sup>1</sup> / <sub>2</sub>
45	2	1	20 21.42	3000	2378	2	34 32.72	100	126	2	4 <sup>1</sup> / <sub>2</sub>

MEASURE.								VALUE.		
Scotch.	Imperial.			Scotch.	Imperial.			Scotch.	Imperial.	
Falls.	Ac.	Ro.	Po. Yds.Ft.	Acres.	Ac.	Ro.	Po. Yds.Ft.		£	s. d.
1	0	0	1 7 8	4	5	0	7 4 7	6d.	0	0 4 3
2	0	0	2 15 7	5	6	1	8 28 6	1s.	0	0 9 3
3	0	0	3 23 6	6	7	2	10 22 2	2	0	1 7
4	0	0	5 1 3	7	8	3	12 15 8	3	0	2 4 1
5	0	0	6 9 2	8	10	0	14 9 4	4	0	3 2
6	0	0	7 17 1	9	11	1	16 3 1	5	0	3 11 1
7	0	0	8 25 0	10	12	2	17 27 0	10	0	7 11 1
8	0	0	10 2 6	11	13	3	19 20 6	15	0	11 10 1
9	0	0	11 10 5	12	15	0	21 14 2	£1	0	15 10 1
10	0	0	12 18 4	13	16	1	23 7 8	2	1	11 8 1
11	0	0	13 26 3	14	17	2	25 1 5	3	2	7 7
12	0	0	15 4 0	15	18	3	26 25 4	4	3	3 5 1
13	0	0	16 11 8	16	20	0	28 19 0	5	3	19 3 1
14	0	0	17 19 7	17	21	1	30 12 6	6	4	15 1 1
15	0	0	18 27 6	18	22	2	32 6 2	7	5	11 0
16	0	0	20 5 3	19	23	3	33 30 1	8	6	6 10 1
17	0	0	21 13 2	20	25	0	35 23 7	9	7	2 8 1
18	0	0	22 21 1	21	26	1	37 17 4	10	7	18 7
19	0	0	23 29 0	22	27	2	39 11 0	11	8	14 5 1
20	0	0	25 6 6	23	29	0	1 4 6	12	9	10 3 1
21	0	0	26 14 5	24	30	1	2 28 5	13	10	6 1 1
22	0	0	27 22 4	25	31	2	4 22 2	14	11	2 0 1
23	0	0	29 0 1	26	32	3	6 15 7	15	11	17 10 1
24	0	0	30 8 0	27	34	0	8 9 4	16	12	13 8 1
25	0	0	31 16 0	28	35	1	10 3 1	17	13	9 7
26	0	0	32 23 8	29	36	2	11 26 8	18	14	5 5 1
27	0	0	34 1 4	30	37	3	13 20 5	19	15	1 3 1
28	0	0	35 9 4	40	50	1	31 17 3	20	15	17 2
29	0	0	36 17 3	50	63	0	9 14 1	21	16	13 0 1
30	0	0	37 25 2	60	75	2	27 10 8	22	17	8 10 1
31	0	0	39 2 8	70	88	1	5 7 6	23	18	4 8 1
32	0	1	0 10 7	80	100	3	23 4 4	24	19	0 7 1
33	0	1	1 18 6	90	113	2	1 1 2	25	19	16 5 1
34	0	1	2 26 5	100	126	0	18 28 2	26	20	12 3 1
35	0	1	4 4 2	200	252	0	37 26 3	27	21	8 2
36	0	1	5 12 1	300	378	1	16 24 3	28	22	4 0 1
37	0	1	6 20 0	400	504	1	35 22 3	29	22	19 10 1
38	0	1	7 27 8	500	630	2	14 20 4	30	23	15 9
39	0	1	9 5 5	600	756	2	33 18 4	40	31	14 4
Ed.1	0	1	10 13 4	700	882	3	12 16 5	50	39	12 10 1
2	0	2	20 27 0	800	1008	3	31 14 5	60	47	11 5 1
3	0	3	31 10 3	900	1135	0	10 12 5	70	55	10 0 1
Ac.1	1	1	1 23 8	1000	1261	0	29 10 6	80	63	8 7 1
2	2	2	3 17 4	2000	2522	1	18 21 2	90	71	7 2 1
3	3	3	5 11 1	3000	3783	2	8 1 6	100	79	5 9 1

TABLE VII.—IMPERIAL ACRES CONVERTED INTO IRISH.

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MEASURE.										VALUE.		
Impl.	Irish.					Impl.	Irish.					
Poles.	Ac.	Ro.	Po.	Yds.	Ft.	Acres.	Ac.	Ro.	Po.	Yds.	Ft.	£ s. d.
1	0	0	0	30	2½	4	2	1	35	5	0	6d. 0 0 9½
2	0	0	1	11	4½	5	3	0	13	43	0	1s. 0 1 7½
3	0	0	1	41	6½	6	3	2	32	32	0	2 0 3 3
4	0	0	2	23	0	7	4	1	11	21	0	3 0 4 10½
5	0	0	3	4	2½	8	4	3	30	10	0	4 0 6 5½
6	0	0	3	34	4½	9	5	2	8	48	0	5 0 8 1½
7	0	0	4	15	6½	10	6	0	27	37	0	10 0 16 2½
8	0	0	4	46	0	11	6	3	6	26	0	15 1 4 3½
9	0	0	5	27	2½	12	7	1	25	15	0	£1 1 12 4½
10	0	0	6	8	4½	13	8	0	4	4	0	2 3 4 9½
11	0	0	6	38	6½	14	8	2	22	42	0	3 4 17 2½
12	0	0	7	20	0	15	9	1	1	31	0	4 6 9 7
13	0	0	8	1	2½	16	9	3	20	20	0	5 8 1 11½
14	0	0	8	31	4½	17	10	1	39	9	0	6 9 14 4½
15	0	0	9	12	6½	18	11	0	17	47	0	7 11 6 9½
16	0	0	9	43	0	19	11	2	36	36	0	8 12 19 2
17	0	0	10	24	2½	20	12	1	15	25	0	9 14 11 6½
18	0	0	11	5	4½	21	12	3	34	14	0	10 16 3 11½
19	0	0	11	35	6½	22	13	2	13	3	0	11 17 16 4½
20	0	0	12	17	0	23	14	0	31	41	0	12 19 8 9
21	0	0	13	47	2½	24	14	3	10	30	0	13 21 1 2
22	0	0	13	28	4½	25	15	1	29	19	0	14 22 13 6½
23	0	0	14	9	6½	26	16	0	8	8	0	15 24 5 11½
24	0	0	14	40	0	27	16	2	26	46	0	16 25 18 4½
25	0	0	15	21	2½	28	17	1	5	35	0	17 27 10 9
26	0	0	16	2	4½	29	17	3	24	24	0	18 20 3 1½
27	0	0	16	32	6½	30	18	2	3	13	0	19 30 15 6½
28	0	0	17	14	0	40	24	2	31	1	0	20 32 7 11½
29	0	0	17	44	2½	50	30	3	18	38	0	21 34 0 4
30	0	0	18	25	4½	60	37	0	6	26	0	22 35 12 8½
31	0	0	19	6	6½	70	43	0	34	14	0	23 37 5 1½
32	0	0	19	37	0	80	49	1	22	2	0	24 38 17 6½
33	0	0	20	18	2½	90	55	2	9	39	0	25 40 9 11
34	0	0	20	48	4½	100	61	2	37	27	0	26 42 2 3½
35	0	0	21	29	6½	200	123	1	35	5	0	27 43 14 8½
36	0	0	22	11	0	300	185	0	32	32	0	28 45 7 1½
37	0	0	22	41	2½	400	246	3	30	10	0	29 46 19 6
38	0	0	23	22	4½	500	308	2	27	37	0	30 48 11 10½
39	0	0	24	3	6½	600	370	1	25	15	0	40 64 15 10½
Rd. 1	0	0	24	34	0	700	432	0	22	42	0	50 80 19 10
2	0	1	9	19	0	800	493	3	20	20	0	60 97 3 9½
3	0	1	34	4	0	900	555	2	17	47	0	70 113 7 9½
Ac. 1	0	2	18	38	0	1000	617	1	15	25	0	80 129 11 8½
2	1	0	37	27	0	2000	1234	2	31	1	0	90 145 15 8½
3	1	3	16	16	0	3000	1852	0	6	26	0	100 161 19 8

MEASURE.											VALUE.				
Irish.		Imperial.				Irish.		Imperial.				Irish.		Imperial.	
Poles.	Ac.	Ro.	Po.	Yds.	Ft.	Acres.	Ac.	Ro.	Po.	Yds.	Ft.	£	s.	d.	
1	0	0	1	18	6½	4	6	1	36	21	0	6d.	0	0	3½
2	0	0	3	7	2¼	5	8	0	15	26	2¼	1s.	0	0	7½
3	0	0	4	26	0	6	9	2	35	1	2¼	2	0	1	2½
4	0	0	6	14	4½	7	11	1	14	6	4½	3	0	1	10½
5	0	0	8	3	0	8	12	3	33	11	6½	4	0	2	5½
6	0	0	9	21	6¾	9	14	2	12	17	0	5	0	3	1
7	0	0	11	10	2¼	10	16	0	31	22	2¼	10	0	6	2
8	0	0	12	29	0	11	17	3	10	27	4½	15	0	9	3
9	0	0	14	17	4½	12	19	1	30	2	4½	£1	0	12	4½
10	0	0	16	6	0	13	21	0	9	7	6½	2	1	4	8½
11	0	0	17	24	6¾	14	22	2	28	13	0	3	1	17	0½
12	0	0	19	13	2¼	15	24	1	7	18	2¼	4	2	9	4½
13	0	0	21	1	0½	16	25	3	26	23	4½	5	3	1	8½
14	0	0	22	20	4½	17	27	2	5	28	6½	6	3	14	1
15	0	0	24	0	0	18	29	0	25	3	6½	7	4	6	5½
16	0	0	25	27	6¾	19	30	3	4	9	0	8	4	18	9½
17	0	0	27	16	2¼	20	32	1	23	14	2¼	9	5	11	1½
18	0	0	29	4	6½	21	34	0	2	19	4½	10	6	3	5½
19	0	0	30	23	4½	22	35	2	21	24	6½	11	6	15	9½
20	0	0	32	12	0	23	37	1	0	30	0	12	7	8	2
21	0	0	34	0	4½	24	38	3	20	5	0	13	8	0	6
22	0	0	35	19	2¼	25	40	1	39	10	2¼	14	8	12	10½
23	0	0	37	7	6½	26	42	0	18	15	4½	15	9	5	2½
24	0	0	38	26	4½	27	43	2	37	20	6½	16	9	17	6½
25	0	1	0	15	0	28	45	1	16	26	0	17	10	9	10½
26	0	1	2	3	4½	29	46	3	36	1	0	18	11	2	3
27	0	1	3	22	2¼	30	48	2	15	6	2¼	19	11	14	7
28	0	1	5	10	6½	40	64	3	6	28	4½	20	12	6	11½
29	0	1	6	29	4½	50	80	3	38	20	4½	21	12	19	3½
30	0	1	8	18	0	60	97	0	30	12	4½	22	13	11	7½
31	0	1	10	6	4½	70	113	1	22	4	4½	23	14	3	11½
32	0	1	11	25	2¼	80	129	2	13	26	6½	24	14	16	4
33	0	1	13	13	6¾	90	145	3	5	18	6½	25	15	8	8
34	0	1	15	2	2¼	100	161	3	37	10	6½	26	16	1	0½
35	0	1	16	21	0	200	323	3	34	21	4½	27	16	13	4½
36	0	1	18	9	4½	300	485	3	32	2	0	28	17	5	8½
37	0	1	19	28	2¼	400	647	3	29	12	6½	29	17	18	0½
38	0	1	21	16	6½	500	809	3	26	23	4½	30	18	10	4½
39	0	1	23	5	2¼	600	971	3	24	4	0	40	24	13	10½
Ra.1	0	1	24	24	0	700	1133	3	21	14	6½	50	30	17	4
2	0	3	9	17	6¾	800	1295	3	18	25	4½	60	37	0	9½
3	1	0	34	11	4½	900	1457	3	16	6	0	70	43	4	3½
Ac.1	1	2	19	5	2¼	1000	1619	3	13	16	6½	80	49	7	9
2	3	0	38	10	4½	2000	3239	2	27	3	2¼	90	55	11	2½
3	4	3	17	15	6¾	3000	4859	2	0	20	0	100	61	14	8½

TABLE IX.—SCOTCH ACRES CONVERTED INTO IRISH.

MEASURE.											VALUE.				
Scotch.	Irish.					Scotch.	Irish.					Scotch.	Irish.		
Falls.	Ac.	Ro.	Po.	Yds.	Ft.	Acres.	Ac.	Ro.	Po.	Yds.	Ft.		£	s.	d.
1	0	0	0	38	1	4	3	0	18	14	4	6d.	0	0	7 <sup>1</sup> / <sub>2</sub>
2	0	0	1	27	2	5	3	3	22	42	6	1s.	0	1	3 <sup>1</sup> / <sub>2</sub>
3	0	0	2	16	4	6	4	2	27	21	7	2	0	2	6 <sup>1</sup> / <sub>2</sub>
4	0	0	3	5	5	7	5	1	32	0	8	3	0	3	10 <sup>1</sup> / <sub>2</sub>
5	0	0	3	43	7	8	6	0	36	29	0	4	0	5	1 <sup>1</sup> / <sub>2</sub>
6	0	0	4	32	8	9	7	0	1	8	1	5	0	6	5
7	0	0	5	22	0	10	7	3	5	36	2	10	0	12	10
8	0	0	6	11	2	11	8	2	10	15	3	15	0	19	3 <sup>1</sup> / <sub>2</sub>
9	0	0	7	0	3	12	9	1	14	43	5	£1	1	5	8 <sup>1</sup> / <sub>2</sub>
10	0	0	7	38	4	13	10	0	19	22	6	2	2	11	4 <sup>1</sup> / <sub>2</sub>
11	0	0	8	27	6	14	10	3	24	1	7	3	3	17	0 <sup>1</sup> / <sub>2</sub>
12	0	0	9	16	7	15	11	2	28	29	8	4	5	2	9
13	0	0	10	5	8	16	12	1	33	9	0	5	6	8	5 <sup>1</sup> / <sub>2</sub>
14	0	0	10	44	1	17	13	0	37	37	1	6	7	14	1 <sup>1</sup> / <sub>2</sub>
15	0	0	11	33	2	18	14	0	2	16	2	7	8	19	9 <sup>1</sup> / <sub>2</sub>
16	0	0	12	22	3	19	14	3	6	44	4	8	10	5	6
17	0	0	13	11	5	20	15	2	11	23	5	9	11	11	2 <sup>1</sup> / <sub>2</sub>
18	0	0	14	0	6	21	16	1	16	2	6	10	12	16	10 <sup>1</sup> / <sub>2</sub>
19	0	0	14	38	8	22	17	0	20	30	7	11	14	2	6 <sup>1</sup> / <sub>2</sub>
20	0	0	15	28	0	23	17	3	25	9	8	12	15	18	3
21	0	0	16	17	1	24	18	2	29	38	0	13	16	13	11 <sup>1</sup> / <sub>2</sub>
22	0	0	17	6	3	25	19	1	34	17	2	14	17	19	7 <sup>1</sup> / <sub>2</sub>
23	0	0	17	44	4	26	20	0	38	45	3	15	19	5	3 <sup>1</sup> / <sub>2</sub>
24	0	0	18	33	5	27	21	0	3	24	4	16	20	11	0
25	0	0	19	22	7	28	21	3	8	3	5	17	21	16	8 <sup>1</sup> / <sub>2</sub>
26	0	0	20	11	8	29	22	2	12	31	6	18	23	2	4 <sup>1</sup> / <sub>2</sub>
27	0	0	21	1	0	30	23	1	17	10	7	19	24	8	0 <sup>1</sup> / <sub>2</sub>
28	0	0	21	39	2	40	31	0	22	47	1	20	25	13	9
29	0	0	22	28	3	50	38	3	28	34	3	21	26	19	5 <sup>1</sup> / <sub>2</sub>
30	0	0	23	17	4	60	46	2	34	21	6	22	28	5	1 <sup>1</sup> / <sub>2</sub>
31	0	0	24	6	6	70	54	2	0	8	8	23	29	10	9 <sup>1</sup> / <sub>2</sub>
32	0	0	24	44	7	80	62	1	5	45	2	24	30	16	6
33	0	0	25	34	0	90	70	0	11	32	4	25	32	2	2 <sup>1</sup> / <sub>2</sub>
34	0	0	26	23	1	100	77	3	17	19	7	26	33	7	10 <sup>1</sup> / <sub>2</sub>
35	0	0	27	12	2	200	155	2	34	39	5	27	34	13	6 <sup>1</sup> / <sub>2</sub>
36	0	0	28	1	4	300	233	2	12	10	3	28	35	19	3
37	0	0	28	39	5	400	311	1	29	30	1	29	37	4	11 <sup>1</sup> / <sub>2</sub>
38	0	0	29	28	6	500	389	1	7	0	8	30	38	10	7 <sup>1</sup> / <sub>2</sub>
39	0	0	30	17	8	600	467	0	24	20	6	40	51	7	6
Rd. 1	0	0	31	7	0	700	545	0	1	40	5	50	64	4	4 <sup>1</sup> / <sub>2</sub>
2	0	1	22	14	0	800	622	3	19	11	3	60	77	1	3
3	0	2	13	21	1	900	700	2	36	31	1	70	89	18	1 <sup>1</sup> / <sub>2</sub>
Ac. 1	0	3	4	28	1	1000	778	2	14	1	8	80	102	15	0
2	1	2	9	7	2	2000	1557	0	23	3	7	90	115	11	10 <sup>1</sup> / <sub>2</sub>
3	2	1	13	25	3	3000	2335	3	2	5	6	100	128	8	0





TABLE XI.—WAGES CALCULATOR.

Rate per Week of 6 Days.	Days, 10 Hours Each.					Hours.								
	1	2	3	4	5	1	2	3	4	5	6	7	8	9
0 2 6	0 5	0 10	0 15	0 20	0 25	0 1	0 1	0 1	0 2	0 3	0 4	0 5	0 6	0 7
0 3 0	0 6	0 11	0 16	0 21	0 26	0 1	0 1	0 1	0 2	0 3	0 4	0 5	0 6	0 7
0 3 6	0 7	0 12	0 17	0 22	0 27	0 1	0 1	0 1	0 2	0 3	0 4	0 5	0 6	0 7
0 4 0	0 8	0 13	0 18	0 23	0 28	0 1	0 1	0 1	0 2	0 3	0 4	0 5	0 6	0 7
0 4 6	0 9	0 14	0 19	0 24	0 29	0 1	0 1	0 1	0 2	0 3	0 4	0 5	0 6	0 7
0 5 0	0 10	0 15	0 20	0 25	0 30	0 1	0 1	0 1	0 2	0 3	0 4	0 5	0 6	0 7
0 5 6	0 11	0 16	0 21	0 26	0 31	0 1	0 1	0 1	0 2	0 3	0 4	0 5	0 6	0 7
0 6 0	0 11	0 17	0 22	0 27	0 32	0 1	0 1	0 1	0 2	0 3	0 4	0 5	0 6	0 7
0 6 6	0 12	0 18	0 23	0 28	0 33	0 1	0 1	0 1	0 2	0 3	0 4	0 5	0 6	0 7
0 7 0	0 13	0 19	0 24	0 29	0 34	0 1	0 1	0 1	0 2	0 3	0 4	0 5	0 6	0 7
0 7 6	0 14	0 20	0 25	0 30	0 35	0 1	0 1	0 1	0 2	0 3	0 4	0 5	0 6	0 7
0 8 0	0 15	0 21	0 26	0 31	0 36	0 1	0 1	0 1	0 2	0 3	0 4	0 5	0 6	0 7
0 8 6	0 16	0 22	0 27	0 32	0 37	0 1	0 1	0 1	0 2	0 3	0 4	0 5	0 6	0 7
0 9 0	0 17	0 23	0 28	0 33	0 38	0 1	0 1	0 1	0 2	0 3	0 4	0 5	0 6	0 7
0 9 6	0 18	0 24	0 29	0 34	0 39	0 1	0 1	0 1	0 2	0 3	0 4	0 5	0 6	0 7
0 10 0	0 19	0 25	0 30	0 35	0 40	0 1	0 1	0 1	0 2	0 3	0 4	0 5	0 6	0 7
0 10 6	0 20	0 26	0 31	0 36	0 41	0 1	0 1	0 1	0 2	0 3	0 4	0 5	0 6	0 7
0 11 0	0 21	0 27	0 32	0 37	0 42	0 1	0 1	0 1	0 2	0 3	0 4	0 5	0 6	0 7
0 11 6	0 22	0 28	0 33	0 38	0 43	0 1	0 1	0 1	0 2	0 3	0 4	0 5	0 6	0 7

## WAGES CALCULATOR.

## WAGES CALCULATOR.

Rate per Week of 6 Days.	Days, 10 Hours Each.					Hours.								
	1	2	3	4	5	1	2	3	4	5	6	7	8	9
2. d. 4.	2. d. 0.	4. d. 0.	6. d. 0.	8. d. 0.	10. d. 0.	2. d. 0.	4. d. 0.	6. d. 0.	8. d. 0.	10. d. 0.	1. d. 0.	3. d. 0.	5. d. 0.	7. d. 0.
0. 12 0	2. 0 1	4. 0 2	6. 0 3	8. 4 1	10. 5 5	2. 2 2	4. 2 2	6. 2 2	8. 2 2	10. 2 2	1. 2 2	3. 2 2	5. 2 2	7. 2 2
0. 12 6	2. 1 1	4. 1 2	6. 1 3	8. 4 1	10. 5 5	2. 2 2	4. 2 2	6. 2 2	8. 2 2	10. 2 2	1. 2 2	3. 2 2	5. 2 2	7. 2 2
0. 13 0	2. 2 2	4. 2 2	6. 2 3	8. 4 1	10. 5 5	2. 2 2	4. 2 2	6. 2 2	8. 2 2	10. 2 2	1. 2 2	3. 2 2	5. 2 2	7. 2 2
0. 13 6	2. 3 3	4. 3 4	6. 3 5	8. 4 1	10. 5 5	2. 2 2	4. 2 2	6. 2 2	8. 2 2	10. 2 2	1. 2 2	3. 2 2	5. 2 2	7. 2 2
0. 14 0	2. 4 4	4. 4 4	6. 4 5	8. 4 1	10. 5 5	2. 2 2	4. 2 2	6. 2 2	8. 2 2	10. 2 2	1. 2 2	3. 2 2	5. 2 2	7. 2 2
0. 14 6	2. 5 5	4. 5 4	6. 5 3	8. 4 1	10. 5 5	2. 2 2	4. 2 2	6. 2 2	8. 2 2	10. 2 2	1. 2 2	3. 2 2	5. 2 2	7. 2 2
0. 15 0	2. 6 6	4. 6 5	6. 6 4	8. 4 1	10. 5 5	2. 2 2	4. 2 2	6. 2 2	8. 2 2	10. 2 2	1. 2 2	3. 2 2	5. 2 2	7. 2 2
0. 15 6	2. 7 7	4. 7 5	6. 7 4	8. 4 1	10. 5 5	2. 2 2	4. 2 2	6. 2 2	8. 2 2	10. 2 2	1. 2 2	3. 2 2	5. 2 2	7. 2 2
0. 16 0	2. 8 8	4. 8 5	6. 8 4	8. 4 1	10. 5 5	2. 2 2	4. 2 2	6. 2 2	8. 2 2	10. 2 2	1. 2 2	3. 2 2	5. 2 2	7. 2 2
0. 16 6	2. 9 9	4. 9 5	6. 9 4	8. 4 1	10. 5 5	2. 2 2	4. 2 2	6. 2 2	8. 2 2	10. 2 2	1. 2 2	3. 2 2	5. 2 2	7. 2 2
0. 17 0	2. 10 10	4. 10 5	6. 10 4	8. 4 1	10. 5 5	2. 2 2	4. 2 2	6. 2 2	8. 2 2	10. 2 2	1. 2 2	3. 2 2	5. 2 2	7. 2 2
0. 17 6	2. 11 11	4. 11 5	6. 11 4	8. 4 1	10. 5 5	2. 2 2	4. 2 2	6. 2 2	8. 2 2	10. 2 2	1. 2 2	3. 2 2	5. 2 2	7. 2 2
0. 18 0	2. 12 12	4. 12 5	6. 12 4	8. 4 1	10. 5 5	2. 2 2	4. 2 2	6. 2 2	8. 2 2	10. 2 2	1. 2 2	3. 2 2	5. 2 2	7. 2 2
0. 18 6	3. 1 0	5. 1 6	7. 1 3	9. 1 2	11. 1 0	1. 2 2	3. 2 2	5. 2 2	7. 2 2	9. 2 2	11. 2 2	1. 2 2	3. 2 2	5. 2 2
0. 19 0	3. 2 0	5. 2 6	7. 2 3	9. 2 2	11. 2 0	1. 2 2	3. 2 2	5. 2 2	7. 2 2	9. 2 2	11. 2 2	1. 2 2	3. 2 2	5. 2 2
0. 19 6	3. 3 0	5. 3 6	7. 3 3	9. 3 2	11. 3 0	1. 2 2	3. 2 2	5. 2 2	7. 2 2	9. 2 2	11. 2 2	1. 2 2	3. 2 2	5. 2 2
0. 20 0	3. 4 0	5. 4 6	7. 4 3	9. 4 2	11. 4 0	1. 2 2	3. 2 2	5. 2 2	7. 2 2	9. 2 2	11. 2 2	1. 2 2	3. 2 2	5. 2 2
1. 1 0	3. 5 0	5. 5 6	7. 5 3	9. 5 2	11. 5 0	1. 2 2	3. 2 2	5. 2 2	7. 2 2	9. 2 2	11. 2 2	1. 2 2	3. 2 2	5. 2 2
1. 1 6	3. 6 0	5. 6 6	7. 6 3	9. 6 2	11. 6 0	1. 2 2	3. 2 2	5. 2 2	7. 2 2	9. 2 2	11. 2 2	1. 2 2	3. 2 2	5. 2 2
1. 2 0	3. 7 0	5. 7 6	7. 7 3	9. 7 2	11. 7 0	1. 2 2	3. 2 2	5. 2 2	7. 2 2	9. 2 2	11. 2 2	1. 2 2	3. 2 2	5. 2 2

Rate per Week of 6 Days.		Days, 10 Hours Each.					Hours.									
		1	2	3	4	5	1	2	3	4	5	6	7	8	9	
2	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1	3 0	7 8	11 6	15 4	19 2	4 1	0	1 1	1 2	1 1	1 11	2 3	2 8	2 2	3 3	3 3
1	4 0	8 0	12 0	16 0	20 0	4 4	0	1 1	1 2	1 1	1 11	2 3	2 8	2 2	3 3	3 3
1	5 0	8 4	12 6	16 8	20 10	5	0 10	1 1	1 3	1 1	1 11	2 3	2 8	2 2	3 3	3 3
1	6 0	8 8	13 0	17 4	21 8	5 5	0 10	1 1	1 4	1 1	1 11	2 3	2 8	2 2	3 3	3 3
1	7 0	9 0	13 6	18 0	22 3	5 5	0 10	1 1	1 4	1 1	1 11	2 3	2 8	2 2	3 3	3 3
1	8 0	9 4	14 0	18 8	23 6	5 5	0 11	1 1	1 5	1 1	1 11	2 3	2 8	2 2	3 3	3 3
1	9 0	9 8	14 6	19 4	24 2	5 5	0 11	1 1	1 6	1 1	1 11	2 3	2 8	2 2	3 3	3 3
1	10 0	10 0	15 0	20 0	25 0	6	0	1 1	1 6	1 1	1 11	2 3	2 8	2 2	3 3	3 3
1	11 0	10 4	16 0	20 8	25 10	6 1	0	1 1	1 7	1 1	1 11	2 3	2 8	2 2	3 3	3 3
1	12 0	10 8	16 6	21 4	26 8	6 6	0	1 1	1 7	1 1	1 11	2 3	2 8	2 2	3 3	3 3
1	13 0	11 0	16 6	22 0	27 6	6 6	1 1	1 1	1 7	1 1	1 11	2 3	2 8	2 2	3 3	3 3
1	14 0	11 4	17 0	22 8	28 4	6 6	1 1	1 1	1 8	1 1	1 11	2 3	2 8	2 2	3 3	3 3
1	15 0	11 8	17 6	23 4	29 2	7	1 2	1 1	1 9	1 1	1 11	2 3	2 8	2 2	3 3	3 3
1	16 0	12 0	18 0	24 0	30 0	7 1	1 2	1 1	1 9	1 1	1 11	2 3	2 8	2 2	3 3	3 3
1	17 0	12 4	18 6	24 8	30 10	7 1	1 2	1 1	1 10	1 1	1 11	2 3	2 8	2 2	3 3	3 3
1	18 0	12 8	19 0	25 4	31 8	7 1	1 2	1 1	1 10	1 1	1 11	2 3	2 8	2 2	3 3	3 3
1	19 0	13 0	19 6	26 0	32 6	7 1	1 2	1 1	1 11	1 1	1 11	2 3	2 8	2 2	3 3	3 3
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